

JUNE 1960

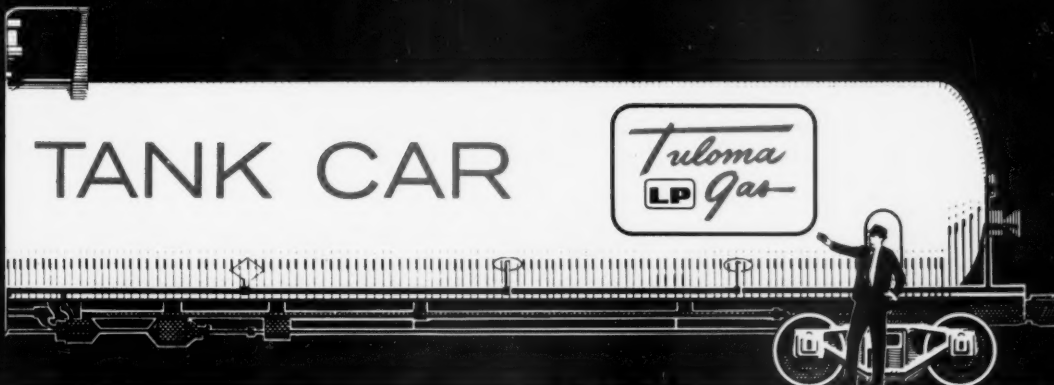
# BUTANE-PROPANE *News*

Check these big  
heating markets!

(Page 41)

A CHILTON PUBLICATION

HEADQUARTERS FOR L.P. GAS INFORMATION SINCE 1931



TULOMA'S EXPANSION is touching every phase of the company's operations. Gleaming white 85-foot-long supertankers are only part of this dramatic growth.

Tuloma's 30,000-gallon supertankers are longer, more efficient, easier to handle, bigger, better, and safer—much safer—than ordinary cars. They will be used exclusively in refinery and storage runs at first.

If you would like to have more information about the other ways Tuloma is expanding to serve you even better, contact your nearest Tuloma office today.

DISTRICT OFFICES:

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Midland, Texas
Des Moines, Iowa
El Dorado, Arkansas
Houston, Texas
Montgomery, Alabama
Yorktown, Virginia

TULOMA GAS PRODUCTS COMPANY

One American Building • Tulsa, Oklahoma 74101 • (918) 436-1000

# Hackney vapor-phase filling means more stops...more gallons delivered per day

LP-Gas tank truck operators who supply customers with Hackney system tanks can *earn more profit*.

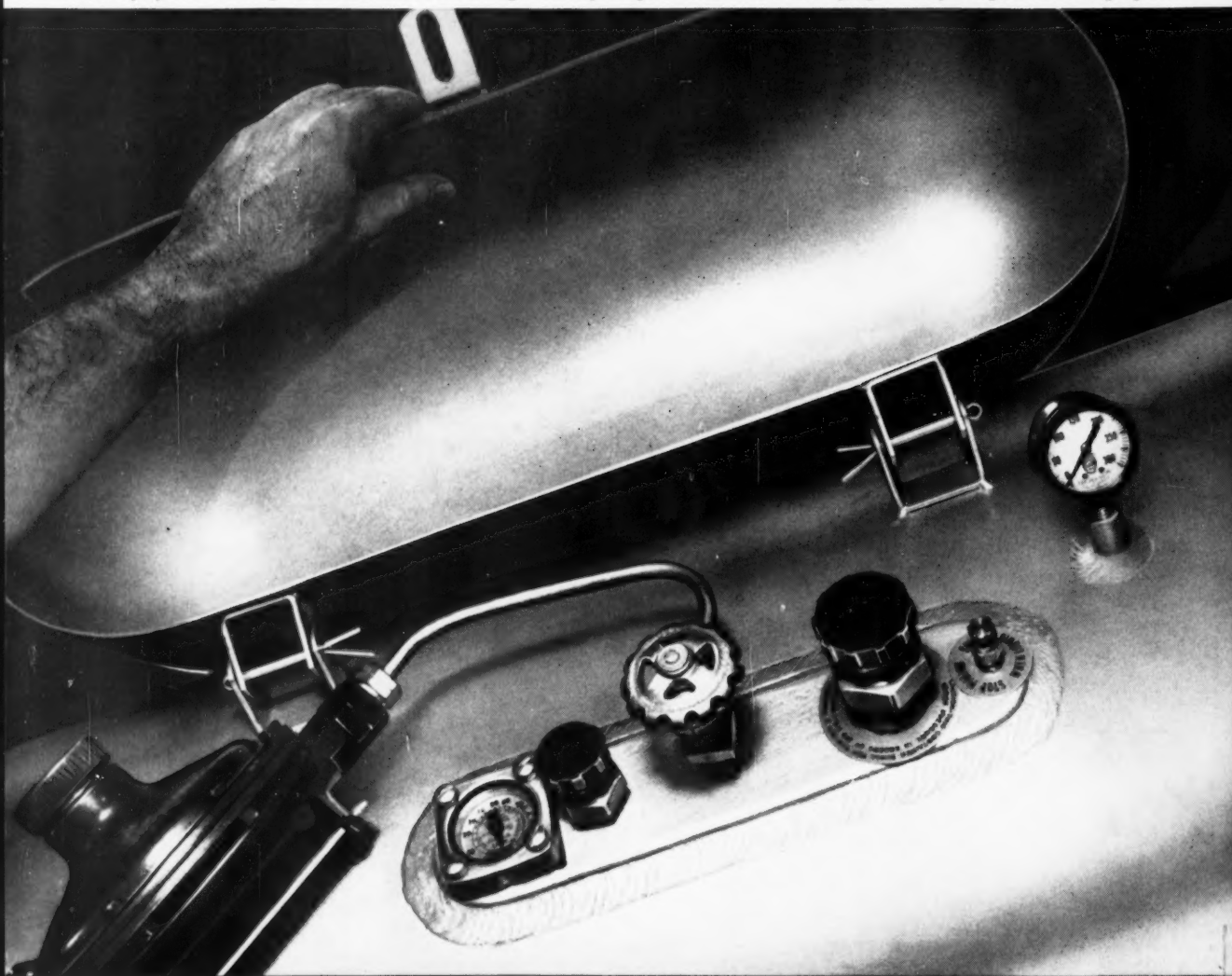
Hackney popular shoulder-mounted tanks equipped with separate fill valve fill directly into the vapor phase. That means faster filling—with more stops per truck per day, more gallons delivered and a corresponding cut in over-all delivery costs. Now with 1¼" Chek-Lok in bottom opening for liquid transfer or evacuation.

Hackney shoulder-mounted tanks enable driver and customer to read the float gauge easily. All Hackney tanks are quality-made and exceed minimum ASME, NBFU requirements, and carry UL listing.

There's a Hackney system tank to meet every customer's need. Sizes: 250 to 3360 gallons (W.C.).

For complete specifications, write to the address below, or see your Pressed Steel Tank representative.

Hackney systems are engineered and tested for filling efficiency in special LP-Gas laboratory, specifically designed for that purpose.



## Pressed Steel Tank Company

*Manufacturer of Hackney Products*

1487 South 66th Street, Milwaukee 14, Wisconsin  
Branch offices in principal cities

LP-GAS CONTAINERS FROM ONE POUND TO 30,000 GALLONS



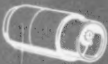
cylinders



systems



fuel tanks for  
trucks and tractors



lift truck tanks



tank trucks

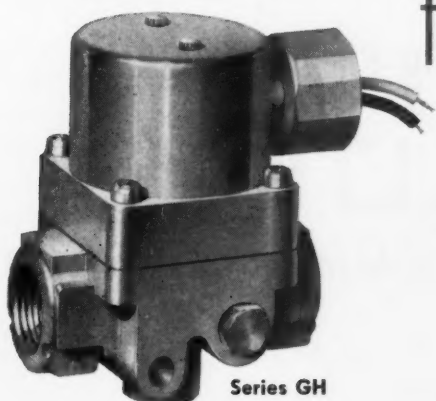


transports



bulk storage tanks

# NEW... Basotrol® Bipolar Magnetic Valves for your **GAS** appliances



Series GH



Series GK

Modern design...space saving...  
spring loaded...silent...dependable  
...mounted in any position

The new Basotrol® bipolar magnetic valves, engineered and built for compactness and flexibility in installation, meet operational and dimensional requirements of a wide range of gas appliances. They offer a new concept in design and automatic operation to meet the needs in your products dependability. Here are the reasons why:

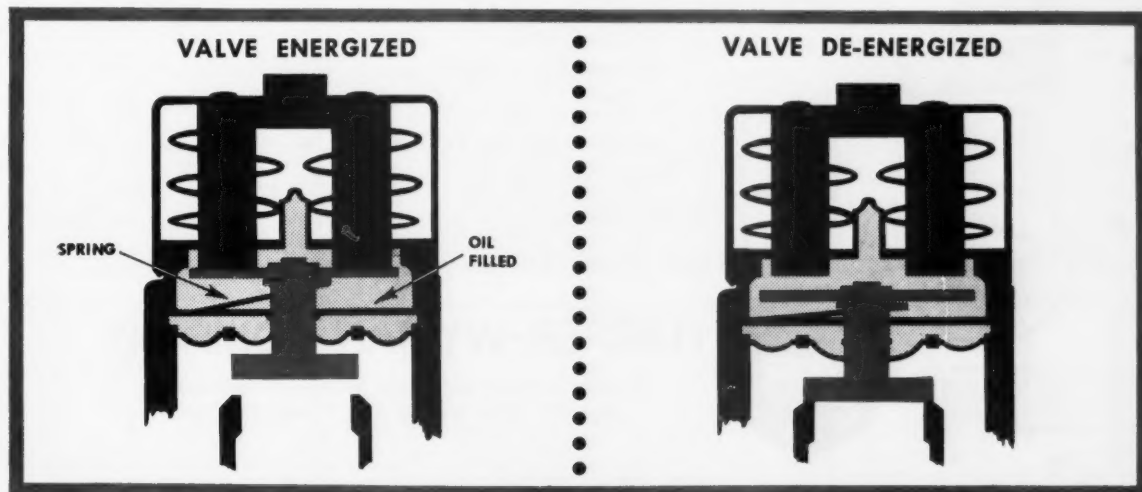
- Oil-filled chamber above diaphragm deadens the action of the valve, assuring sound-proof operation.
- Unique spring design assures strong sealing and positive closing. What's more, the valve can be mounted in any convenient position and the magnetic operator can be assembled to the body in any four positions.
- Low overall height and diameter permit easy installation in constricted areas.
- The magnetic operator can be installed in the field without removing the valve body from the manifold.

The Basotrol bipolar magnetic valves, ideal automatic valves for use with the B815 and B1815 Baso® Valves, are available for low and high voltage service — 25v., 115v., 230v., a.c.

For more information write Baso Inc., Dept. SB-2, Milwaukee 1, Wisconsin.

**BASO**   
**INC.**

Milwaukee 1, Wisconsin

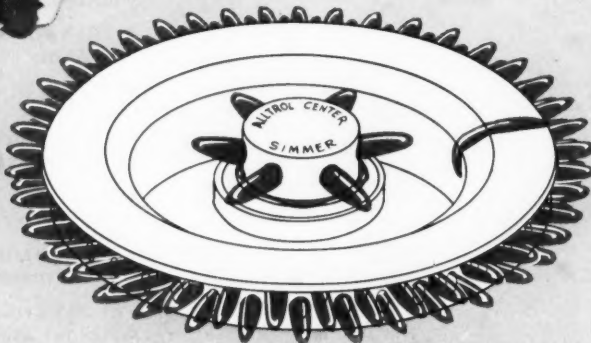


**HOP-A-LONG HARPER—The Gold Star Ranger—SEZ:**

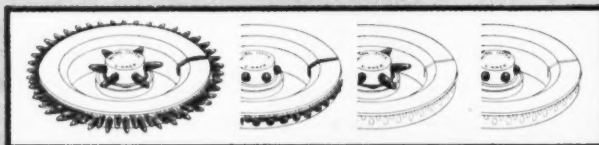
**Next to my six-shooter, the most  
convincin' thing on the range is...**

**ALLTROL®**

**CENTER SIMMER BURNERS**



Send for **FREE**  
**CENTER SIMMER**  
Demonstration  
Manual. Contains  
five simple, sales-  
closing demonstra-  
tions.



"Be a smart Buckaroo! Draw a bead on those 'jist lookers' by showin' 'em how this star feature of your Gold Star ranges actually works. Yessiree, when you demonstrate its *measured heat settings yore usin' a real double-barrel 'convincer,'* because ALLTROL Center Simmer's 'clicks' are as famous as Billy the Kid's six-guns. No need to be a spell-binder. Jist show 'em . . . and the sale's as good as in yore saddlebags."



ALLTROL CENTER SIMMER Burner meets the basic specifications for AGA "Gold Star Ranges."



**HARPER-WYMAN COMPANY**

Specialists in Burners and Controls for Domestic Gas Appliances  
Dept. 60-B, 8550 Vincennes Ave., Chicago 20, Illinois



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# BIGGER PAYLOAD DELIVERY UNITS

**2500 WG Units  
Weigh Under  
23,000 Pounds  
LOADED!**

(Under 13,000 lbs. Empty)

Available In Twin or Single Barrel Models

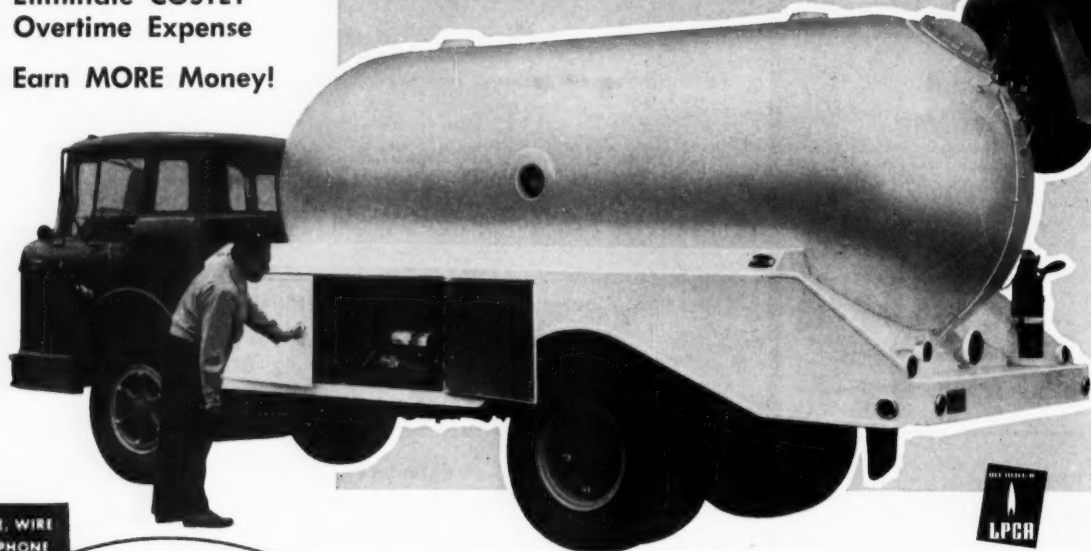
## BALANCE YOUR LOAD THE **Nor-Tex** WAY

- ★ Deliver EXTRA Gallons Each Trip!
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- ★ Drive LESS Miles!
- ★ Eliminate COSTLY Overtime Expense
- ★ Earn MORE Money!

## In Four Popular **Nor-Tex** Models

Bulk plant operators everywhere are praising these sleek, LIGHT-WEIGHT, stream-lined twin or single barrel Nor-Tex LPG Delivery Units. Nor-Tex original ALUMINUM SKIRTING and CABINETS and engineering designs have reduced over-all weight. Even 3000 WG units and over, available for use on cab-over or cab-forward trucks, are still within the 18,000-lb. axle limit. With custom designed Nor-Tex high flow plumbing, these units deliver "extra" gallons faster.

For day in, day out efficiency, durability, payload, fast loading, high rated delivery, perfect balance and appearance Nor-Tex delivery equipment just can't be beat!



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## Manufacturers of Fine LPG Equipment

Whatever your needs... Trucks, LPG Truck Tanks, LPG Tractor and Motor Fuel Tanks, Filling Stations, new space-saving vertical "Rockets," LPG Storage and Domestic Tanks... we can supply a factory tailored Nor-Tex unit, designed and built by men with years of LP-Gas bulk plant experience. Anhydrous Ammonia Tanks are also available. Phone or write us. Interested attention, experienced assistance and helpful suggestions are always yours for the asking.

**HAUL MORE GAS  
... LESS STEEL  
Than Ever Before**  
IDEAL IN STATES  
IMPOSING TON MILE  
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- ★ **STANDARD**
- ★ **PAYLOAD**
- ★ **CUSTOM**
- ★ **DE LUXE**



Aluminum  
Skirting  
and  
Cabinets

### BONUS SAVING

As authorized new truck distributors Nor-Tex can save you hundreds of dollars on Internationals ... Chevrolets ... Fords ... Diamond T and GMC's. Order any unit you need. You can't beat a Nor-Tex deal for all-around value.

### Nor-Tex ROCKET BOOSTING LPG SALES

Everyone is talking about the extraordinary Nor-Tex Rocket. This attention-compelling, sales-boosting LPG Service Station is flexible to any type of installation ... occupies only 72" diameter. Wire, write or phone for details.

**Nor-Tex**  
**LOW COST**  
**LPG**  
**Financing**  
A PLAN TO MEET EVERY NEED!

## THE Nor-Tex STAR CUSTOM BUILT

*with every desired feature in an above ground tank*

- ★ Nor-Tex construction exceeds all safety requirements.
- ★ Thoroughly buffed and cleaned for finest appearance.
- ★ The Nor-Tex STAR is completely fitted and ready for use.
- ★ Bottom outlets are standard on all above ground tanks.
- ★ Immediate delivery on one Nor-Tex STAR or a truckload.



## May We Help You?

Here, at Nor-Tex, interested attention, experienced assistance and helpful suggestions are always yours for the asking. No obligation. ... give us a call.

**Internal Relief  
Valve on all  
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- ★ **Rego Multi-Valve**
- ★ **Rego Regulators**



# TANK CO.

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John Hallberg



E. R. Bollinger, Jr.

## Don't like to boast, but . . .

John Hallberg has about as widely-based and authoritative a background as we've bumped into in the carburetion field. Born in England, he graduated from Weybridge College. Active in race car circles in England, he built his own fuel-injected race car and worked for Connaught Grand Prix Car Co. as carburetion engineer. Then he came to the United States and went to work for Ford Motor Co. in Dearborn as a carburetion and fuel-injection engineer. Currently, he's a design engineer at American Liquid Gas Corp., carburetion equipment firm.

When we said "brief glimpse," we meant just that. There must be literally reams of interesting copy in each of the just-mentioned chapters in John's life. But all we could get out of him was the above-bare-bones outline and a "Don't like to boast, you know."

We did a bit better with E. R. Bollinger, Jr. He's an assistant professor of Industrial Management at Georgia Institute of Technology, currently on leave to get a Doctor of Business Administration degree from Indiana University. E. R. described his association with LPG business like this:

"In 1956, Tom Fields of Southeastern LPGA requested that I supervise a one-week management course for the LPG dealers of the Southeast. After over one year of research, this course was initiated in June, 1957, and was repeated in June, 1958. Have

spoken at the Georgia LPGA convention (1957), the North Carolina LPGA convention (1957), and conducted a one-day management discussion at the joint South Carolina-Georgia convention (1959). Have also been asked to speak at the Northwest convention in Atlantic City in October, 1960. In addition, I have conducted 'composite analyses' for area groups.

"As part of my doctoral program at Indiana, I plan to conduct a rather extensive accounting systems and management study in the Southeast. Tom Fields and Les Fagan have been working closely with me on this proposed project."

Both Hallberg and Bollinger debut as BPN authors in this issue.

## BACK TALK

### The straw and the camel's back

"Sometimes these things just get a fellow down!" With that explanation, LPG dealer R. A. Hyde (Hy-Pane Gas Co., Inc., Pipestone, Minn.) sent us a carbon of a letter he had just written his congressman.

It seems that Rep. H. Carl Andersen of Minnesota had sent all the constituents on his mailing list an April issue of his Washington news letter. In it, Rep. Andersen staunchly proclaimed:

"Although I have staunchly supported our rural electrification programs and have personally sat in committee hearings on 90 per cent of the total amount loaned to date, I learned some interesting facts in preparing for my address last month before the NRECA convention shown in these pictures." (A pair of pictures in the news letter shows Andersen addressing the kilowattaters under a huge "Rural Electrification (is) Good for All Americans" sign.)

"One of the points I made in



Your bankbook proves  
American Metered Service  
helps build sales...  
cuts costs



LP-Gas meters bring utility-type service to your customers, build confidence in gas and gas appliances. That's one reason so many industry leaders capitalize on the load-building ability of American metered service. They also appreciate the operating economies possible with metered service... buy more gas when rates are low by using increased storage on consumers' premises... no revenue loss from "dump gas" sales by competitors... sliding rate schedule with minimum charge... no more costly cross-hauling or out-of-fuel calls.

Ask your American representative to detail the many ways an investment in metered LP-Gas service builds sales, cuts costs and increases profits.

#### WC-45-LPG Welded Steelcase

Light weight, sturdy, economical  
... ideal for average domestic  
service without central heating.  
Features removable soldered  
top and internal, counter-type  
index. Rated capacity 45 cfh  
propane at 1/2-inch w.c. differ-  
ential - 5 psi working pressure  
- 1/2-inch FPT connections -  
shipping weight 8 lbs.



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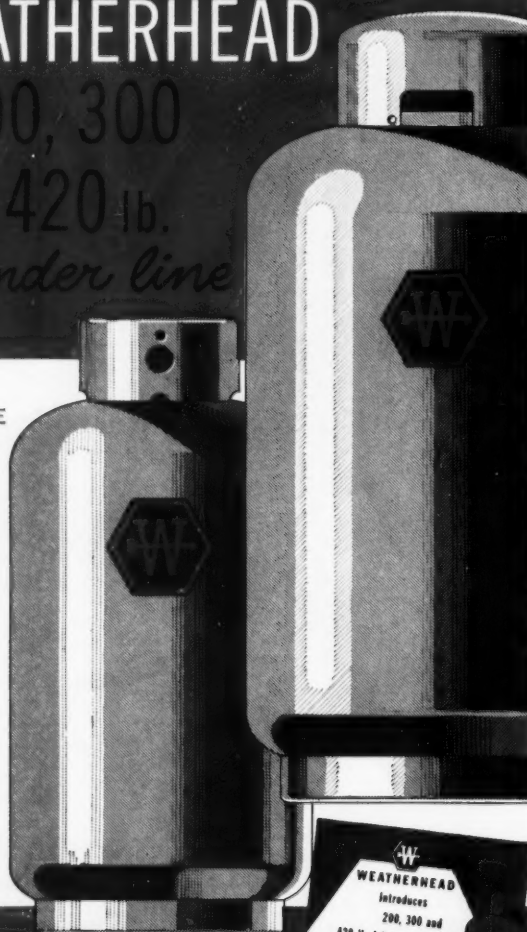
SUPPLIERS TO THE GAS INDUSTRY for Ironcase, Tinned Steelcase, Aluminumcase, and Welded Steelcase Meters • American-Westcott Orifice Meters • Instruments  
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defense of the present loan program," Rep. Andersen continues, "was the fact that the \$3.5 billion loaned to date has generated an electrical appliance and equipment market amounting to at least \$14 billion. Recently, I asked the REA Administrator to give an official estimate as to the federal taxes collected on this business. His estimate, including income taxes on wages, showed the U. S. government received about \$1 billion in excise and profits taxes as a result of the REA loan program, a figure at least 20 times more than the difference between the two per cent interest rate on REA loans and the actual rate currently paid by the government. From the standpoint of the U. S. Treasury, this has been a very profitable program, not to mention the great good it has accomplished in rural America."

That, to an LPG dealer plagued with the twin locusts of REA loans and coops, was the straw that broke the camel's back. Wrote constituent Hyde to Congressman Andersen:

"In my small opinion, I do not think anyone in our country can call himself a good American if he favors anything which is in direct rebuttal to the things upon which this country was founded. For example, when the government finances the REA at a loss—with my money—it just does not set right. Why should my money be used to promote the sale of electric appliances?

"You and I both know: that over 90 per cent of the farms have electricity; that a lot of the REA firms have invested the monies loaned to them at higher rates than they are paying the government; that these monies are invested in interests outside their own business; and that most of the REA's new business is not the farm trade, but manufacturing, etc.

"It appears to the writer that the people running our government are interested in the votes and NOT WHAT IS RIGHT. To try to make a RIGHT out of the REA loan rate of two per cent by throwing up a smoke screen of excise and profit taxes is absolutely ridiculous."

**"We've expanded business volume 33% without adding a single truck or man!"**



**"Motorola 2-way radio has actually cut 1,000 miles a month from mileage formerly needed to handle this sales increase."**

Bob Hemphill, Vice President of Skokie Valley Hicksgas, Inc., one of Northern Illinois' leading dealers, attributes this profitable expansion to the *tighter vehicle control* provided by their new Motorola 2-way radio system. As he puts it, "When customers call in to report a low tank, it used to mean extra mileage in most cases. Now, with direct radio contact, the closest truck can be dispatched to the scene. This tighter vehicle control has cut overtime tremendously, with substantial savings in operating expense."

The firm's three locations at Skokie, Lyons and Park Forest, Illinois, provide fuel, burner and installation service to 5,000 home owners



2-way radio saves many "dead-heading" miles every month. Drivers report in as to disposition of remaining load . . . and are routed to the closest account that can use extra fuel.

and 1,000 industrial accounts. Delivery routes change every day, yet drivers can be contacted quickly to handle "fire out" and "fuel gone" emergencies. They also call in to report partial loads—and are routed to the closest account needing fuel.

This service, speed and dependability keeps a bright polish on the Hicksgas reputation throughout the area. And Motorola's famous reliability and operating economy makes certain 2-way radio remains a *money-making* investment. You can put this Motorola "money-maker" to work in your operation, too! Let your Motorola representative show you how, or write for your Motorola "facts folder" today.



**MOTOROLA 2-WAY RADIO**

Motorola Communications & Electronics, Inc., 4501 Augusta Boulevard, Chicago 51, Illinois

A Subsidiary of Motorola Inc.

# Most popular regulator in the industry

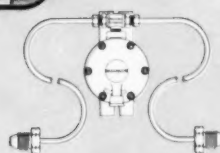
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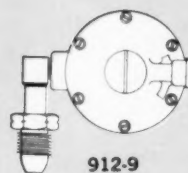
"LITTLE JOE"

## HERE'S WHY...

- Rugged construction in every detail for long, trouble-free life.
- Maximum effective area of strong sensitive diaphragm.
- Accurate, powerful, friction-free lever mechanism.
- Large, newly improved bug-proof vent.
- Sturdy, clean pipe connections  $\frac{1}{4}$ " inlet,  $\frac{3}{8}$ " outlet.
- Large orifice minimizes freeze-ups.



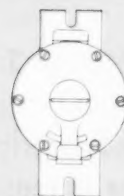
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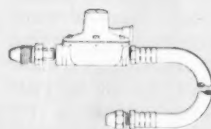
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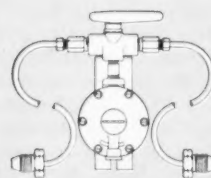
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**FISHER GOVERNOR COMPANY** Marshalltown, Iowa

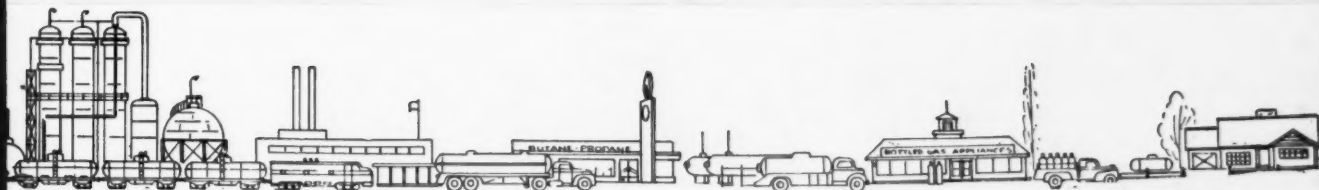


SINCE 1880



# HIGHLIGHTS

BPN



LPG pipelines are the industry's hottest news items. Here is a round-up of current developments:

Construction is proceeding on the Mid-America Pipeline. Two separate crews are headed northward from their starting points, Pampa, Tex., and Pratt, Kan. The 1800-mile line, to be completed in December, will then pipe Texas and New Mexico LPG directly to Minnesota and Wisconsin.

Reduced shipping rates for LPG have been announced by three railroads operating in the area to be served by the pipeline. The cuts amount to about one-half cent per gallon, which with a recent one-cent tankcar allowance increase, would largely wipe out the pipeline's two-cent-per-gallon advantage. Some shippers were doubtful the cuts would go through. So was Mid-America Pipeline Co. President Robert E. Thomas, who noted that authorities are not likely to allow railroads to cut rates below costs.

Another LPG pipeline, the Little Big Inch, may be forced to expand because of a railroad rate squeeze. Texas Eastern Transmission Corp. Vice President Millard K. Neptune says his company may extend its Houston-to-Lebanon (O.) line, first to Lima, O., then to Elmira, N. Y. He explained that--to keep the long-haul business--railroads have boosted short haul rates from the pipeline's current terminus.

A third major LPG pipeline might soon be a reality. Canadian companies, elated by their government's recent authorizations to export huge quantities of natural gas to the U. S., predict early approval of LPG exports. Present production of LPG, 14,000 bbl per day, is expected to go up to 92,000 bbl per day, due to greatly increased natural gas production. Pembina Pipelines Ltd. plans a \$140 million, 1300-mile pipeline to the Chicago area. Standard Oil of Indiana and two subsidiaries, Service Pipeline Co. and Tuloma Gas Products Co., have studied the project. On the negative side: Standard decided not to participate, Neptune says the pipeline is "many years off," and Thomas says: "Producers would have to give the products away in Alberta before the line would be feasible."

Wild rumors that Chicago's 1549 propane buses are on their way out of town have little factual basis. The Chicago Transit Authority asked a well-known research organization to study the economics of the situation and report back within 60 days. Seems diesel interests stirred up a lot of smoke over allegedly impending LPG price increases.

The first industry-wide safety award will be presented next May, according to a recent announcement by LPGA. The H. Emerson Thomas Award will go to the marketing unit judged "most safety minded" on a four-point basis: accident record, thoroughness of safety program, originality of program, and employee participation. Any marketing unit, such as an individual bulk plant or store, may participate.

LPGA Vice President and Counsel Arthur C. Kreutzer on May 10 asked a subcommittee of the House Committee on Education and Labor not to change the existing federal wage-hour law and to delete from present bills sections which would bring local retail and service businesses under the law.

*Continued on next page*

Continued

# HIGHLIGHTS

AGA requirements for trailer and mobile home ranges, built-in cooking units, water heaters, forced air furnaces, floor furnaces, and recessed heaters have been adopted. Already, 19 appliances in these categories have been approved. AGA has also published two new ASA standards: Z21.10.1-1959 (for all heaters but side-arm types with less than 50,000 Btu input) and Z21.10.2-1959 (for side-arm types with less than 50,000 Btu input).

Acquisitions--California Liquid Gas Corp., Sacramento, bought Shasta Gas Co., Yreka, Calif., and five Idaho subsidiaries of California Western Gas Co., San Francisco. . . . Ashland Oil & Refining Co., Ashland, Ky., bought Hurst Propane Co., Ithaca, N. Y. . . . H. C. Little Burner Co., San Rafael, Calif., bought Tamco Corp., Sebastopol, Calif., manufacturer of "Clipper" forced air furnaces and air conditioners and "Barnes" floor furnaces.

Sales--First quarter sales of General Gas Corp. (Baton Rouge, La.) up from \$9.2 million to \$9.6 million, increasing earnings more than 30 per cent to \$468,759. . . . 1959 sales of Metrogas, Inc. (Chicago-headquartered firm with operations from northern Wisconsin to South Carolina) up from \$1.16 million to \$1.21 million, nearly doubling net income to \$85,678. . . . First quarter sales of Suburban Propane Gas Corp. (Whippany, N. J.) up from \$11.95 million to \$12.01 million, raising net earnings 20 per cent to \$872,000. . . . Suburban Gas Service (Pomona, Calif.) kicks off the "Golden Sixties" with a "Golden Meter" campaign, using meters to win new customers.

Names--John A. Grice, Picayune, Miss., was named "man of the year" by Mississippi LPGA in recognition of his efforts to build membership and institute a statewide group insurance plan. . . . Ralph H. Engstrom and Robert E. Poethig, both associated with the RegO Division of The Bastian-Blessing Co. since the late '30's, were elected vice presidents of the company at a recent board meeting.

Just got back from the Rodeo! For the first time in its history, the National Lift Truck Rodeo (Los Angeles, Mid-May) had several LPG entries, thanks to LP-Gas Council's Logan Smiley. One of the entries is the subject of the second installment (July) in BPN's new power series by John Hallberg.



## CURRENT L. P. GAS & L. R. GAS PRODUCTION & INVENTORIES

(A. P. I. figures - in thousands of gallons)

	Propane	Butane	Bu-Pro Mix	Iso- Butane	Other Mixes	Total LPG	Total LRG
<b>Production (U. S.)</b>							
April '60.....	365,874	198,955	55,213	55,884	66,781	742,707	270,018
April '59.....	316,555	175,415	65,170	50,970	58,682	666,792	234,079
April '60 to date	1,492,929	786,385	207,859	227,835	275,833	2,990,841	1,044,907
April '59-same period.....	1,250,646	689,985	244,144	200,037	216,336	2,601,058	882,447
<b>Inventories (4-30-60)</b>							
Zone A.....	1,797	1,830	16	—	10	3,653	15,388
Zone B.....	43,591	5,478	289	1,486	963	51,807	7,826
Zone C.....	29,104	35,013	657	5,819	—	70,593	10,075
Zone D.....	33,904	5,979	6,291	1,079	148	47,401	868
Zone E.....	91,742	118,405	875	21,566	15,926	248,514	43,065
Zone F.....	118,136	72,985	1,512	16,285	155	209,073	456
Zone G.....	4,678	603	9,033	—	63	14,377	725
Zone H.....	936	489	186	157	101	1,869	22,901
U. S. ....	323,888	240,782	18,859	46,392	17,366	647,287	101,304
U. S. (4-30-59)	342,539	185,355	20,619	68,469	3,932	620,914	96,756

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Robertshaw





# WASHINGTON REPORT

by NEIL REGEIMBAL, *Washington Editor*

★ **FTC may crack down on local deceptive advertising**

Federal Trade Commission is continuing to toughen its enforcement of laws against deceptive advertising. The agency now checks printed advertising in newspapers and magazines, is considering moving into policing strictly local advertising. So far, it has left this to states and cities—but officials say there's little enforcement.

★ **Funds limit government's LPG research**

A shortage of funds is preventing the Agriculture Department's Research Service from increasing its efforts to expand use of LPG on farms. Congress was told: We have a small amount of research work going, using liquefied petroleum gas in weed control in cotton and in the curing of burley tobacco, but the budget will not provide for any increase in LPG research.

★ **Another truck tax item**

The cost of installing pipes and fittings inside tank truck bodies, and charges for grinding welds inside these bodies, are subject to the excise tax. The Internal Revenue Service recently ruled such charges are a part of the total cost of the truck.

★ **No co-op tax, REA loan, or fair trade laws in 60**

Congressional action on co-op taxation will have to wait for next year. Congressional leaders had planned to consider boosting the tax, but won't have time before the early July adjournment. Now, it'll be a part of an overall tax study, due in a year or two. There will be no action on REA loans either. President Eisenhower and Secretary of Agriculture Benson aren't willing to push for hard action on such a red hot issue in an election year. The Republicans, principal supporters of reform, are already on shaky political ground with the farmers. Fair Trade legislature was sidetracked for this year when the House Rules Committee refused to permit a fair trade bill to come to a House vote.

★ **Minimum wage laws may be stalled**

The minimum wage law faces a new hurdle, disagreement among proponents over how far to go, which could stall any action this year. Sponsors want to add 8 million workers to coverage and boost the minimum from \$1.00 an hour to \$1.25. But Labor Secretary Mitchell favors increasing the minimum only 10 to 15 cents, and adding only 3 million workers, mostly in retail trade.

★ **Credit bill might pass, could hurt honest retailer**

Opponents of a pending proposal in Congress to require "full disclosure" of installment and credit charges are arguing that the measure wouldn't stop the unscrupulous seller from deceiving the consumer, but would work extreme hardships on honest businessmen. But the measure is gaining lots of election-year support—and may have an outside chance of passage.

★ **Self-employed's retirement plan could also pass.**

A tax break for self-employed persons who set up their own retirement plan may finally be heading for passage. The Treasury Department, previously flatly opposed, is now willing to approve the proposal with some changes. One would require an employer to set up a comparable plan for employees before he could take advantage of it.



# space was limited

but Kurth Malting Company got propane for standby with ACF vertical propane storage tanks

Where space is at a premium, companies on interruptible natural gas contracts face a difficult storage problem. Often the solution lies in the installation of vertical storage tanks developed by American Car and Foundry. Available in capacities up to 30,000 gallons, these pressure vessels may be used for LP gas and anhydrous ammonia or, with slight modifications, for vinyl chloride, refrigerants and other compressed gases or liquids.

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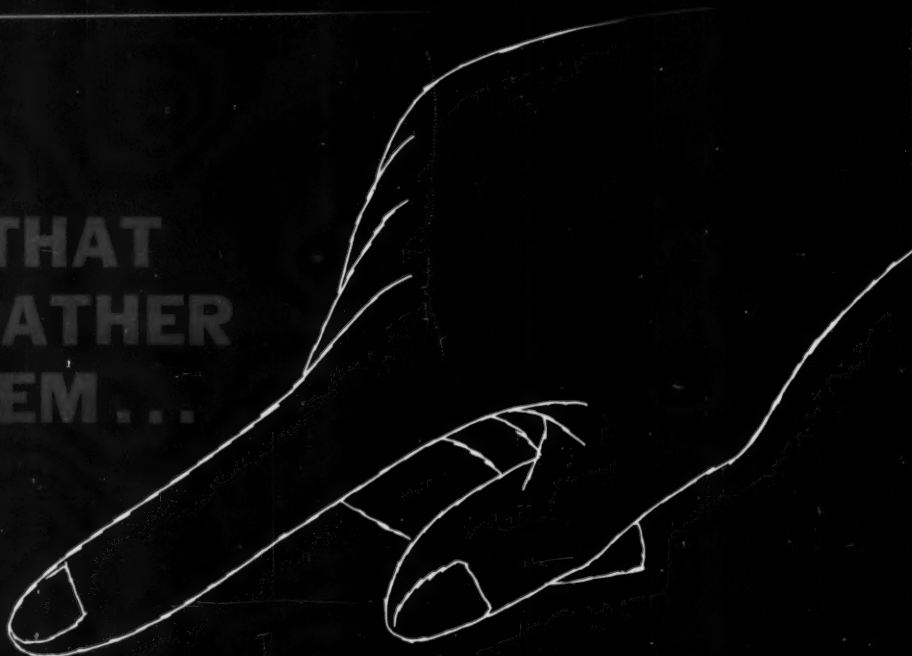
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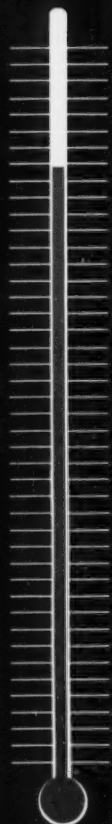
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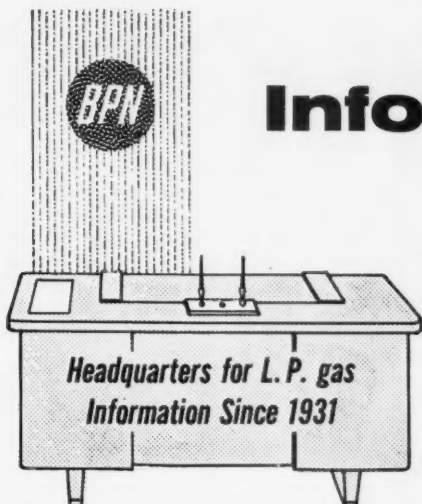
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## Information Desk

*Don't heat storage tanks instead of buying a vaporizer . . . Flare stacks should be 50 ft from storage tanks . . . You can't scarf without oxygen.*

### Use great caution when applying heat to storage tanks

*Minnesota*

In such small commercial and farm applications as large brooder houses, laundry stores, large motels, and small industrial plants, we have many problems in supplying vapor pressure when gas use rises to a peak load and/or when the ambient temperature falls well below zero.

We realize that an additional tank would help meet the requirements during normal temperatures and an industrial vaporizer could solve our problem during cold weather. But, both space and cost of this additional equipment seems prohibitive when the problem arises only during brief periods a half dozen times a year.

Do you know of any manually operated vaporizers with a list price under \$250? What are the dangers of applying controlled heat to the bulk storage tank if this heat could be applied with a deflected flame, electric heat tapes, blankets, or grain dryer type warm air blowers? What standards apply to the construction of a vaporizer? Are any other type of heat exchangers suitable for this use?

J. A. W.

We do not know of any manually-operated or automatically-operated, approved vaporizer that can be purchased for \$250. Both John E. Mitchell Co. (Dallas, Texas) and Consolidated Gas & Equipment Co. of America (Denver, Colo.) make small vaporizers that should meet your load requirements.

Unless heat is applied to the storage tanks with caution and adequate safety controls it can be dangerous, because of overheating, uncontrolled heat applications, etc. NFPA Pamphlet No. 58 and your local state code have sections which deal with use of L. P. gas vaporizers and the application of heat to tanks.—Ed.

### Oxygen necessary for steel burning

*Ohio*

An industrial customer now using an oxy-propane for the scarfing reports that in some places liquid propane is being used in place of oxygen and propane for scarfing. The user either reduces oxygen use or eliminates it altogether.

How does this process operate? What type of equipment could be used? What is the name of anyone now using this process.

S. J. B.

We are not aware of any process whereby steel can be scarfed without the use of oxygen. Scarfing is the process of burning imperfections from the surface of steel billets, blooms, slabs, etc., or of other metals. The oxygen does the actual burning. Acetylene or propane plays a very small roll in the actual burning process. The fuel gas is used to heat the steel to a temperature where the burning can be started, then the oxygen unites with the hot metal and burns it. Once ignition takes place, the fuel gas flow is turned down and the oxygen unites with the metal to burn it.

Are you sure that acetylene is not the fuel gas being replaced by the propane? Considerable saving in fuel and oxygen costs have been experi-

enced by companies which have changed to propane. See July, 1957, issue of BUTANE-PROPANE News, page 38.—Ed.



### Stainless steel for blocking off manifold

*Nebraska*

Please advise what type metal to use in blocking off the intake manifold on propane conversions.

R. W. D.

The metal used for blocking off the intake manifolds in propane conversions is generally stainless steel of about 1/16 in. thickness. Swedish steel is also suitable, but may not be as readily available.—Ed.

### Adapters not available for Jaguar

*Washington*

I have just recently completed rebuilding my Jaguar XK engine for a Mark VII M saloon. Having restored it to practically Rolls Royce specifications I want to keep it that way. Hence, am leaning very strongly to the use of propane as an alternative fuel. I have discussed the conversion with a few local suppliers and they have suggested I write to you for more complete and up-to-date information.

The following details of the power plant may aid you in your recommendations:

Engine: Jaguar XK powerplant,

modified cam, 6 cylinder, double overhead camshafts.

Valving: Intake 1 in. diameter, exhaust 1½ in. diameter, 90 deg. inclination.

Capacity: 210 cu in., 3490 cc.

Horsepower: 260 plus or minus brake horsepower.

Carburetion: Twin side draught 1½ in. diameter suction units.

Compression ratio: 9:1.

All parts are standard Jaguar parts although most are used in the "C" type engine.

The carburetors meter air as well as gasoline and therefore have

venturis incorporated in them which I would trust would be satisfactory for propane operations. Furthermore, there is relatively little room under the bonnet to incorporate much more than distributing ring.

My prime consideration is longevity of the power plant with a pure, clean burning fuel, although operating economy should not be totally disregarded.

I trust this will give you enough information to make ideal recommendations for the various components used in the conversion.

K. G. L.

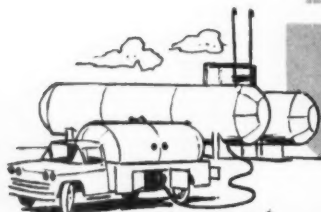
We do not know if any of the L. P. gas carburetor manufacturers have fittings which will permit the adaption of their carburetor to your engine. Also we do not know about the space available.

Most of the L. P. gas carburetor manufacturers will have converters to vaporize the fuel and carburetors to serve your engine, but since the Jaguar engine is a unit that is rarely converted, they will not have an adapter to connect the carburetor to your manifold or existing carburetor.—Ed.



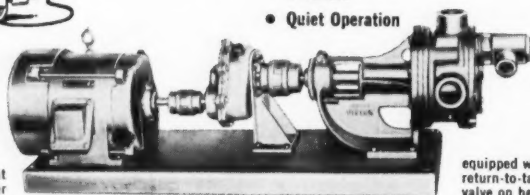
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You'll have a pump that will keep delivering at a profit. It is constructed with Viking's original "gear-within-a-gear" principle that is proved for efficiency and long life. And now, for still longer life, it is equipped with automatic internal pressure lubrication—an exclusive Viking feature.

\* Patent pending



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Try Fenix & Scisson Inc., 5805 East 15th St., Tulsa, Okla.—Ed.

## Flare stacks not dependent upon draft

Japan

In storing propane and butane gases I am desirous to find authentic information in sitting the "flare stack" as to diameter and draft-height required. What are the factors that determines the above, also the minimum distance allowed or required by laws the stack has to be away from the stored tanks?

A. S. S.

Generally any source of ignition must be at least 50 ft. from storage tanks. More is desirable if the installation is large. If there is a prevailing wind direction, it would be well to keep the flare stack on the windward side.

I do not know of any set rule for the diameter or height of flare stacks, which do not depend on draft. The vapors are forced out through it by pressure. It should be sized to reduce velocity to a point where ignition can be maintained, although I have seen many stacks operate with such velocity that the flame base may be several feet from the end of the stack.—Ed.



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## "THESE TRAILS WOULD SHAKE THE CAB OFF AN ORDINARY TRUCK...BUT NOT OUR CHEVY"

Few trucks are subjected to the body-wracking beatings that are part of a day's work for this Chevrolet Series 60 pulpwood hauler, owned by J. E. Fox, North Carolina logging contractor. As Bobby Fox, a partner in the business points out, "Loaded full-up with pulpwood, we drive right over stumps and potholes you'd think would tear the truck to pieces. These trails would shake the cab off an ordinary truck, but not our Chevy. Chevies are built to hold together longer."

■ No matter where you haul, you'll profit by the new toughness that's built into Chevrolet truck cabs for '60. You'll benefit from a cab that stands up to slam-bang runs over rough terrain, a cab that stays in A-1 shape years longer. Here are some of the ways in which Chevy assures this tight, maintenance-minimizing performance:

1. Tough new longitudinal sills reinforce the underbody; provide a solid foundation for cab sheet metal.
2. Extra-sturdy door openings—box-section pillars and sills assure lasting alignment. Doors stay weathertight with a minimum of maintenance.

3. New double-walled roof makes cab stronger and safer. Box-section pillars provide solid roof support.

There's a world of comfort for you, too. A wide seat, for instance, that softens the ride yet gives you extra support where it's needed. And there's more head room, hip room, shoulder room and leg room for rangy drivers.

First chance you get, visit your dealer and drive a new Chevy. Experience new Torsion-Spring Ride. Check up on Chevy's famous gas-saving 6's and V8's. Then you'll know, for sure, why you can expect thousands of extra miles out of a Chevy; why you can be sure of more work per day at least expense. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

## 1960 CHEVROLET STURDI-BILT TRUCKS



# Beyond the Mains

By WILLIAM W. CLARK • Editor



## Total electric living—or total suffocation?

If you read Lee Brand's article<sup>1</sup> in BUTANE-PROPANE News for September, 1959, you are aware of the insulation requirements for electric heating. As Brand put it, for electric heating to be anywhere near economical, a house would have to be "thermos-bottle-tight."

Further proof of these onerous requirements is evident in the "Electric Heating & Cooling Fact Book,"<sup>2</sup> which is dedicated to the furtherance of electric heating. The book lists the following as "recommended . . . insulation necessary to insure that an electric heating system will provide the comfort and economy expected of it:

"1. Ceilings and roofs: 5 in. of low conductivity insulation at proper density.

"2. Walls: 3½ in. low conductivity insulation at proper density, installed with effective vapor barrier.

"3. Under floors and between floors of a multi-story building: 2 or 3 in. effective insulating blanket.

"4. Around concrete slab floors: 2 in. perimeter insulation."

(Is it starting to feel a little stuffy in here?)

Next, we start filling up those little holes that bring about air changes. "In order to minimize heat loss due to the infiltration of cold air from the outside, it is important that the weatherstripping be installed on all outside doors and single glass windows."

The only thing left now is the windows.

"The heat loss through single glass area is approximately two-and-one-half times greater than the heat loss through double glass (storm sash). Therefore, storm windows or double glass windows are recommended in most areas. Even

in warmer climates, storm windows should be considered not only for the economical benefits but for the advantages of increased comfort."

Whoa! Hold on there, just a darned minute! You mean we Southerners (and Southwesterners) are going to have to put in storm windows? Suh, that's carrying things too far! (About \$200 or \$300 too far!)

Just how stuffy all this is going to make things around the house is not explained in the "Fact Book." You would have to get down to individual cases to find that out. But it is a well-known fact that a certain amount of infiltration of outdoor air is necessary for comfort, health, and efficiency. Engineers tell us that the rate of introduction of outside air should be 5 cu ft per minute per person, *minimum*. The recommended rate is 7½ cfm. If the person smokes, the rate jumps to 25, minimum, and 40, recommended!

Then, too, the rate at which outside air is needed, is determined by the per-person air space in the house. The less space per person, the more ventilation is needed. A person "allotted" 50 ft of air space might require only 7 cfm, but that same person with only 100 cu ft would require 25 cfm. But this varies with the person and his habits. A sedentary person of the upper crust requires less air space than a school child with the same background. Laborers need still more, and grade school children in the lower economic brackets need the most of all.

The reasons for the variation in needs should be obvious. Rather than breaching the tenets of good taste, we'll leave it to the reader to figure them out for himself. But we will say this: If "total electric living" is going to mean the air change per person per minute is going to be cut to a bare nothing, thank goodness only the rich (and well-washed) can afford it!

<sup>1</sup> "The Truth on Costs for Electric Heating," p. 98.

<sup>2</sup> Published by EIP, 2132 Forden Ave., Madison 1, Wis.

# Now **MASTER TANKS** are filled **FASTER**

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with larger pumping  
equipment now  
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Now, all domestic tanks produced by Master Tank & Welding, Dallas, Texas, and Quincy, Illinois, will feature a new Multi-Valve® with a separate fill valve. This allows a much faster filling rate than any current Multi-Valve®.

This system utilizes splash filling, which creates a refrigerated condition and reduces the vapor pressure. Then tank can be filled without using a vapor return hose. Also, the direct flow on the separate fill valve cuts friction to a minimum

and reduces the strain on the truck pump. Rego engineers, in conjunction with Master engineers, have designed this new Multi-Valve® for the exclusive use of Master Tank & Welding. It cuts the time of each delivery stop and increases the number of calls each truck can make in a day. All this adds up to greater PROFITS. Another improvement has been to add a check lock to the bottom of the tank for liquid withdrawal.

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## A challenge to your records

# How will you know when you get where you are going?

E. R. BOLLINGER, JR.

ONE of the major problems in the management of any business enterprise is the maintenance of managerial control over operations. This is especially true in the L. P. gas industry for several reasons:

1. In order to maintain control, it is necessary that some kind of a "standard" for performance be set.
2. Careful comparison of actual performance with that "standard" must be made periodicaly.
3. When actual performance fails to measure up to the standard set, action must be taken to either—
  - (a) Bring actual performance into line with the standard, or
  - (b) Change the standard to make it more realistic.

The above reasoning applies to any business organization, so possibly we ought to examine these steps in the light of the current situation in the L. P. gas industry.

The very first item, "determina-

tion of standards of performance," requires a long and careful look. Before any of these determinations can be made, we must recognize the fact that these are individual firm standards. Theoretically, each manager should be able to look at his operation and say, "We *should* be able to do so and so in such and such a period of time, with so many man hours of a specific kind of labor, and at a cost of X dollars."

Note that we are *not* saying we *will* be able, but that we *should* be able. This is the standard toward which management must work.

Our problem is that we view these problems through introspection, and say to ourselves, "Now if I were doing this job—" But the fact is that most of our undertakings are accomplished through employees, not through the personal efforts of the manager-owner.

In order that firm objectives may be met through employees, management must learn to:

1. Plan carefully the scope and methods, and policies to be

employed by the firm in dealing with customers, potential customers, employees and suppliers (here I refer to suppliers of product and services employed in the operation of the firm).

2. Organize the utilization of resources (both material and human) into an effective operating unit. This involves careful recognition of inter-relationships, etc.
3. Motivate these operating and service employees so that they will willingly seek to make their objectives or goals consistent with the objectives or goals of the firm. Too often when we think of motivating an employee, we think only in terms of dollars. It would be misleading to say that dollars are not motivators, but it would be just as wrong to assume that they are the *only* motivators. In varying degrees employees react to other motivational stimuli such as pride of seeing a job

### Let's establish "standards" for profit-making!

In order to work intelligently toward a profit goal, a dealer must establish standards of performance, Mr. Bollinger believes. Today, such standards are lacking. For example, in studies he made recently for several L. P. gas companies, all operating in the same area, the question was asked, "What is your cost per gallon delivered to customer storage?" Answers varied from 10 to 25 cents—all because of lack of uniformity in allocating costs.

The key to establishing standards and matching them in performance is good records, he points out in this, the first of a three-part series.

Do your records tell you . . .

1. What it costs to deliver a gallon of gas?
2. When to trade in an old piece of equipment on a new one?
3. What are the relative merits of lease tanks vs. customer-owned tanks, in terms of dollars and cents?
4. How much cash you will have on hand at the end of next month?

Good records, geared to pre-established standards of performance, can give management answers to these and dozens of other questions that must be faced before intelligent decisions can be made.

well done; recognition for having performed well; availability of promotional channels to him as the result of superior performance and growth in his job; and economic security through job stability. Of course, there are many others, but these may serve to illustrate the point.

4. *Control* the utilization of these firm resources so as to maximize the returns sought for by the firm and its owners. This control phase of management is the one that I seek to emphasize in this study, although it seems fitting to note that control is just one of four basic areas of managerial responsibility.

With these things in mind, let us return to the individual firm manager who is trying to establish standards for his firm. Where should he start? This whole concept of the establishing of standards implies a revolutionary and an evolutionary kind of progression.

Standards cannot be established overnight—they grow and develop over a period of time. In fact, when a bobtail is dispatched to cover a specific territory or route the dispatcher has mentally set up a standard in his mind. He has ascertained that the man, equipment, and product dispatched can meet the needs of customers on that route. Why didn't he send two or three trucks, or why did he not send the one truck over twice the area that he did? The answer, obviously, is that he had established (often unconsciously) a standard in his own mind. My suggestion here is that we formalize and rationalize some of this "standards setting." This itself may be done

in a systematic manner.

One of the first standards that should be set might relate to "return on investment." I mention this one first because many of the other standards may be determined to a great degree by this one. For the owner-manager to decide on this standard he must first recognize the concept of "opportunity." What other chances do I have in respect to a given dollar investment?

1. I might put my money in a savings account and get from 3 to 4 per cent annual interest on it.
2. I might invest it in bonds or in stocks and (depending on the specific risks) get from 4 to 10 per cent return or even higher.
3. I might invest my money in the operation of this firm. For the dealer already engaged in the LPG business, all of these opportunities visualized may not be immediately available to him. He has committed himself (or his money) already.

His problem now is to determine what is a reasonable rate of return on this investment. He must compare the risks, etc., inherent in his business to those that exist elsewhere, and through this kind of comparative procedure establish his rate of return.\* The important thing is that he clearly establish what this rate should be, and that the rate is a return on investment. This means that a reasonable allowance has already been made for managerial salaries.

When the annual profit is ultimately determined, this standard (pre-established) will serve as an indicator as to the degree of success attained in the operation—or,

perhaps we should say, in the utilization of invested resources of the owner-manager. This indicator may suggest that profits obtained were reasonable or that they were unreasonable, depending on their conformity to the preset standard. How else can we judge the adequacy of a particular profit?

Once this standard has been set we then proceed to branch into the various sub-areas of the company's operations. This procedure allows us to visualize each of the component parts, and to relate its contribution to the overall company objective.

This whole procedure may suggest that one of the last things to be determined is product price. This again is as I believe it should be. I am certain that most of us put more emphasis on price per gallon than is warranted.† More emphasis should be placed on the cost (to the customer) of the "total service," not of the cost per gallon of LPG. Price competition is injurious to the whole industry. When sales are made with the emphasis on price rather than "total service," the customer is misled into believing that he is buying so many gallons of L. P. gas.

Actually, in every case the customer buys L. P. gas *only* because of the service that this gas (or the company selling it) will provide. Because of this, there are some companies that today have established the policy of not revealing to the customer price per gallon. These companies have gotten entirely out of the "price competition" race and are putting the emphasis where the customer wants it—on the provision of service.

Soon after the manager begins exploring the implications of standard setting, he finds himself "guessing" as to what the standards should be. He begins to wonder what the delivered cost of a gallon of LPG should be. (In fact, he very frequently has cause to wonder what it *is*, much less what it should be.)

This brings us directly to the question of records (largely of an accounting nature). Unless ade-

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\*Rate of return equals annual profit before tax and after management salaries over invested capital

†In a recent survey it was determined that many domestic customers have no idea what price per gallon they are paying.

quate records are maintained there is no likelihood that historical costs can be determined with any accuracy, and it is most unlikely that he can get to first base in the determination of "should be's." The past often serves as a setting on the stage of today that directs the actions of the future. Thus, historical records may give a definite indication as to what should be in the future.

Further aid can be found through the development of averages from a series of companies or firms (assuming they all keep good records). The development of standards can be facilitated by the cooperative effort of association groups or even separate independent groups, but only if these groups all have a common concept of the standard being set.

In a group of 12 dealers the question was asked recently, "What is your cost per gallon delivered to customer storage?" The answers varied from 10 to 25 cents. Then on further investigation it was learned that in this figure some firms included depreciation of operating facilities, others did not; some included the overhead cost of maintenance, others did not; some included certain of the selling costs, others did not.

There is some basis for questioning certain of these items, but the point is that unless adequate records are maintained with some degree of uniformity such cooperative inquiries as the one cited above are useless exercises in arithmetic.

The purpose of your accounting records may be variously described. Some of us (I am afraid) would say that the only purpose accounting records serve is to enable us to file such reports and statements as are required by federal, state and local agencies. There are others of us who understand the values of good records as a tool for rational decision-making. Certainly, none of us would suggest that records will solve all of our problems, but I contend that our accounting records will supply the basis for many of the decisions which we must make in the efficient management of the L. P. gas firm.

The records that we keep (of an

accounting nature) should:

1. Facilitate the establishing of standards.
2. Indicate, periodically, actual performance.
3. By a comparison of standards with performance, indicate the specific areas of firm activity that require special management attention.

You say you can't afford the cost of good records? My answer is that none of us can afford the cost of not having good records.

What are some of the specific operating questions that might be answered by good accounting type records? Here are a few:

1. What is the seasonal pattern for the sales of my firm for the domestic and for the industrial segment of its business operation?
2. What does it cost to deliver a gallon of LPG?
3. How much cash will I have on hand by the end of next month? How much will I need by that time?
4. What are the operational costs per truck mile? Per truck stop?
5. How can I tell when to trade-in and replace an old piece of equipment with a new one?
6. What is the maximum distance that I should establish in deliveries from a bulk plant?
7. Should I carry and service appliances or should I leave this to the hardware and furniture stores?
8. What are the relative merits of "lease tanks" and customer owned installations—in dollars to my firm?
9. How often and when should my firm engage in general maintenance (paint ups, etc.)?
10. How should my firm set its policy on credit extension?
11. What is the cost of cost accounting?
12. What portion of my budget am I spending in specific areas such as salaries, advertising, customer service (maintenance), etc.?
13. When should I lay off during slack periods and then re-

hire? When should I keep unnecessary employees on the payroll in anticipation of future requirements?

14. Just what is the present liquidity condition of my firm?
15. What is our break-even point? What implication does this have relative to pressure in volume and price relations?

This is not intended to be a complete list, but simply to suggest the possibilities that many of us tend to overlook.

There might be one caution injected at this point. Don't pay more for an accounting system than it is worth! Few of us are guilty of this, but over-emphasis on this phase of operations can be just as destructive as under-emphasis. Question 11, above, suggests that we be aware of the costs and the gains of our record systems. Decide what information you want and can use (and will use) and then set up your system (or have someone do it for you) so that the information that you need will be included. Remember that accounting records are intended to aid business—business is not organized for the purpose of keeping accounting record. Fit your records to your needs, but be sure that you completely understand your needs.

New let us return to the question which was passed in the title of this article—How Will I Know When I Get Where I Am Going? By this time the answer to this question should be obvious.

First of all, decide where you want to go (set standards for all phases of the firm operation). Then keep complete and adequate performance records to measure current activity. A comparison of these two will show when we are operating according to plan; but even more significantly, it will enable us to ascertain when and where performance is not as it should be.

Under this system we always know where we are and where we should be, and there is no way that we can be misled into thinking that we "have arrived" where we should be—when in fact we have not! ■

Next month: "Your records and their function in your business."



This converted Army six-wheel drive personnel carrier provides the perfect answer for Evergreen Supply Co.'s delivery problems. The company is located in a small mountain town, some 20 miles west of Denver and the surrounding terrain is rugged. Winter deliveries were rough until "Wego" came along.

## With six-wheel drive and winch, "Wego" most anywhere

J. ARTHUR THOMPSON

**W**HAT would you do if you needed a piece of equipment that was out of your financial range? A. R. "Rossi" Clark, owner of Evergreen Supply Co. in Evergreen, Colo., solved this problem by building his own.

Set in the lower elevation of the "Front Range" of the Rockies, Evergreen is surrounded by rugged, winding mountain roads. In and around this small mountain town, there are many year-around residents who look to Evergreen Supply for L. P. gas. So, regardless of the weather or road conditions, Evergreen Supply has to be prepared to deliver.

The ordinary "bobtail" truck does not have the power to trans-

port LPG to some of the points that Evergreen Supply delivers to. So Clark converted a vehicle that would do the job.

He purchased a surplus Army six-wheel drive personnel carrier and changed it over in his own shop. The motor and chassis were completely checked and overhauled. Then a Butler 605-gal. domestic propane tank (suitably modified) was mounted on it, and a power winch was installed on the front end. Evergreen Supply Co. now had a tank truck that could deliver the gas to these hard-to-get-to places.

The new truck delivery was christened "WEGO" and go it does! It can claw through mud and snow and negotiate the steepest of grades. If the power on all six wheels isn't enough to move it out of a steep, slick spot, the driver just pulls out the cable from the

power winch, hooks it around a nearby tree, and "WEGO" winds itself out by the bootstraps!

One of Evergreen's more hazardous deliveries is to the Lazy A S Ranch, a 4000-acre Hereford spread, where a 1500-gal. tank must be filled. The road leading to the ranch is winding and narrow with an 1800-ft drop in a mile and a quarter. But, "WEGO" makes the delivery with ease and speed.

In addition to the converted personnel carrier, Evergreen Supply has four conventional delivery trucks, a 7500-gal. semi-trailer, which is used to bring gas from the wholesale supplier in Denver, and three service trucks all devoted to LPG customer work. All vehicles are equipped with two-way radio. Twelve men are in Evergreen's employ and total annual volume is approximately 2 million gal. ■



**Is this the answer to our safety problems?**

## **Industry—state partnership regulates Oklahoma LPG dealers**

WILLIAM W. CLARK • Editor

C. Chester Pate, L. P. gas administrator for the state of Oklahoma, has good reason to look pleased. Since he took office in 1955, accident rates in the state have been cut 34 per cent.



Is better regulation the high road to a safer industry?

There are many people in the industry who feel it is. They feel that some of the most critical problems of safety are impervious to attack with any other weapons.

Only regulation can possibly touch the "do-it-yourself-er," for example—the handyman type who, given a wrench and a screwdriver, can "do" himself and family, friends, innocent bystanders and complete strangers into the Hereafter. Nor can anything less than a central authority reach the unprincipled dealer who would wilfully disregard the rules of safety if they should get in the way of his pocketbook. Alas, there are such.

The conscientious dealer—and the vast majority of dealers deserve the adjective—might wonder why he, along with such fellows, should be subjected to regulation. But of course he doesn't operate on his own little island, so what happens throughout the industry affects him.

When there are accidents, the industry's public relations are impaired, and the conscientious dealer suffers. Insurance rates rise, and insurance becomes more difficult

to obtain—for him as for the rest. And always there hangs over his as well as everyone else's head the threat of harsh, arbitrary, vengeful regulation.

So he accepts the fact that some form of regulation is needed. But how far should it go? Can it be effective in eliminating the hazard of untrained personnel, the live bomb of poorly maintained equipment, the scourge of carelessness, ignorance, and irresponsibility? Can these be eliminated without it? Isn't some central authority needed to be a clearinghouse and an agency for the enforcement of good safety practices?

How far should regulation go, what form should it take, what can it actually accomplish? are suitable matters for serious consideration.

One thing is certain: If regulation is to be made more effective, the industry itself must take the initiative. Through promulgation of Pamphlet 58 and other standards, and through the drafting of model laws, we have already done a good deal. But more can and should be done, for regulation in many areas leaves much to be desired.

Too much regulation can be oppressive, too little, dangerous. Finding the thin line between them that is marked "just right" is difficult. The best way to attack it is to study the present regulatory laws of the various states. It's at the state level that the majority of regulating is done.

In this, the first of an occasional series of such studies, BPN examines the statutes of Oklahoma and their application to the problem of safety in the handling and utilization of LPG. Oklahoma is not typical of the 50 states, but it is, according to many who are qualified to know, one of the best.

## Does Oklahoma have the answer to our safety problems?

*Texas willing (which it probably isn't), Oklahoma might almost be called the cradle of the L. P. gas industry. It's one of the biggest producing states, one of the biggest consuming states, and headquarters for most of the leading suppliers of the product.*

*So it's only natural that Oklahoma would have one of the finest and most enlightened regulatory structures in the nation. It closely approaches self-government, for not only are the standards that must be adhered to the product of the industry itself (essentially they are identical to Pamphlet 58), but the administrators of the law are experienced in LPG handling and, most important, they are responsible to the industry itself.*

*This last condition is accomplished by a provision of the law specifying that the State Liquefied Gas Petroleum Board, the governing body, shall be composed of dealers and supplier representatives.*

*It's easy to see that such a system has advantages. Rules and regulations will naturally be the product of knowledge, not guesswork. Their enforcement will be based upon temperateness and common sense. But it may have pitfalls, too. Will it in truth protect the consuming public or will it throw up a smokescreen behind which dealers may hide? Will it weed out incompetent and unscrupulous dealers or will it merely serve to perpetuate a small ruling clique?*

*Those are logical questions, and they deserve straight answers. Let's cut open Oklahoma's structure to see how it's built. The facts we uncover therein might speak for themselves.*

OKLAHOMA got a head start on much of the rest of the nation in the marketing of LPG, so it is surprising that it was as slow as it was to adopt a set of regulations governing the conduct of the industry. This didn't happen until 1941. But the rules soon needed substantial revising; this came in 1945.

The power of administering these laws was vested in the state fire marshal, who was ex-officio the "LPG administrator." In effect, the administration was no more than a wing of the marshal's office.

But by 1953, the tail was wagging the dog. The LPG administration was too big to remain subordinated with other divisions to the office of the fire marshal, so as a part of a major overhaul of the laws, it was granted the status of a separate agency.

The statutes of 1953 have since been amended on several occasions, but they are the basic framework within which the present staff functions.

This, in essence, is the organization:

There is, first, the Oklahoma Liquefied Petroleum Gas Board, consisting of seven members. Five of these represent districts, the state being divided (for this purpose) into four quarters plus a circular central section carved out of the four adjoining corners of the quarter-sections. Within this central district is Oklahoma City, the headquarters of the L. P. Gas Administration.

The other two members of the board are chosen from the state at large.

The board is very powerful (subject, of course, to the restraints imposed by the legislature, its crea-

tor). It is "empowered to and authorized, and it shall be its duty to prescribe, adopt, and promulgate . . . such rules, regulations, and/or specifications relating to safety in the storage, distribution, dispensing, transporting, and utilization of LPG in this state, and in the manufacture, fabrication, assembly, sales, installation and/or use in this state of LPG systems, containers, apparatus or appliances, not inconsistent with this act, as it shall deem just and reasonable, and to amend, revoke, or supersede the same . . ."

There is appended, however, a proviso that sets the limits on how far the board can go in "prescribing, adopting, and promulgating" new rules: It is that "any and all new or revised or amended rules, regulations and/or specifications shall, at the time of adoption, conform to the standards of the National Fire Protection Association



Pate and his men cover the state from border to border. The circle on the map delineates the central district, which is surrounded by four others. Pate keeps operations decentralized; inspectors live in the districts where they work.

relating to the design, construction, installation and use of systems, containers, apparatus, appliances and pertinent equipment for the storage, transportation, dispensation, and utilization of LPG then in effect."

On the face of it, this proviso would seem to require that Oklahoma rules follow Pamphlet 58 to the letter, chapter and verse. But numerous variances were seen to be necessary, so the administrator solicited an opinion from the attorney general of the state on the spirit of the law. He held that additional regulations could be pro-

mulgated by the board, following public hearings, if they were at least as stringent as those in Pamphlet 58.

Furthermore, one additional modification was permitted, this one actually less stringent, at least in theory. Paragraph 2.13 (d) of Pamphlet 58 calls for a "man-proof fence." The Oklahoma board felt such a device was virtually impossible to erect, so set up its own fence qualifications.

All told, there are about a dozen and a half paragraphs in the rules and regulations that were authored by the board itself.

As an example, there is the clause in the Oklahoma regulations which forbids the installation of underground piping or tanks within 25 ft of a well, cistern, septic tank, or storm cave. This prohibition is not in Pamphlet 58. But storm caves (particularly, since they are used only infrequently) can get filled with gas which has seeped through the earth. Their odor may have filtered out en route. Then on one of the rare occasions when someone enters the cave to get away from a storm, and lights a match, he might trigger an explosion. The 25-ft rule helps prevent this.

The board's powers are not dictatorial. The provision requiring public hearings prevents this. It holds that the administrator, before any new or revised rules are adopted, must give 10 days notice to "registrants under this act" by mailing them a copy of the proposed changes and setting a time and place for a public hearing on them.

Registrants, of course, are LPG dealers, so they have ample opportunity to make themselves heard.

With such powers, what manner of men comprise the board?

LPG men, every one!

Each is appointed by the governor from a list of seven or more nominees submitted to him by "the persons, firms or corporations required to be registered under this act, or by their representatives . . . (and are) subject to confirmation by the Senate." Not only must they have a five-year residence in the state, but the five district representatives shall have been "engaged in the retail distribution of liquefied petroleum gas in the state of

Oklahoma for a period of one year, or more," and the two members at large must be "engaged in and representative of the container and appliance phases of the LPG business in Oklahoma."

At present, each member serves a four-year term. Each is modestly compensated for his attendance at board meetings, and necessary travel expenses are paid. The maximum compensation per year is \$360 per member.

The administrator reports to the board. He's appointed by the governor for a six-year term from a list of nominees submitted by the board. His appointment must be confirmed by the Senate. He hires a chief deputy, two other deputies, and three inspectors, plus three office employees to help him carry out the duties of the office.

The administrator is no mere political appointee. He must satisfy residence as well as physical and moral qualifications, and must not be engaged in any business related to the industry, but he must have at least two years' experience in positions of responsibility in or connected with it. Deputies must have a year-and-a-half's experience and inspectors must have two years' experience in "the actual physical installation or inspection of . . . systems, containers, apparatus, or appliances, or installation thereof . . ."

The first administrator to be named under authority of the 1953 statute was W. J. Marshall, who at the time was state fire marshal. In 1955, he was succeeded by his chief deputy, C. (for Colonel) Chester Pate. Pate had previously been an inspector, and several years' experience had qualified him to take over the top spot at that time.

The statutes bring all dealers operating in (and into) the state under the surveillance of the administration through a licensing system. Everyone doing business in LPG in the state must have a license, renewable annually, and to get it the first time he must pass a comprehensive test. The test was devised by Pate himself, and it includes 100 questions representative of a wide range of LPG distributing procedures. For example,

"24. What type hose shall be used for the transfer of L. P. gas?"

"38. To obtain best results, what is the procedure for converting a

natural gas heater or appliance to liquefied petroleum gas?"

"58. What is the minimum head and shell thickness of any container?"

As Pate says, the test is not difficult, but to be able to pass it, the applicant must be thoroughly grounded in the rules and regulations as promulgated by the board. He will find *all* the answers there. But he *must* study the rule book very carefully.

The record shows that the tests have not served to exclude appli-



"The tests for dealers are not difficult," says Pate. "But about one out of four fails the first time because he didn't conscientiously study the book of rules."

cants from doing business in the state or to perpetuate established businesses. There are today 505 dealers licensed under the statutes. In each of the years 1957, 1958, and 1959, an average of 61 new fuel dealer permits were issued. This was well over 10 per cent of the total number of licensees.

However, the total number of licensed dealers did not increase at the rate of 61 per year, because there was a certain number of dealership turnovers.

Did any applicants fail to pass the test?

"A few did," says Pate. "About one out of four failed the first time because they did not conscientiously study the rule book. But with only a few exceptions, they all passed it when they took it again 30 or 40 days later."

Many of the licensed dealers are from adjoining states, doing busi-

*(Oklahoma's changes in Pamphlet 58 are listed on the following two pages. Story continued on page 32.)*

# How Oklahoma tailored Pamphlet

The state of Oklahoma has adopted NFPA Pamphlet 58 as the basis for its own safety rules. A number of additional provisions have been written into the rules and a few changes have been made. Following are the additions and the changes, the latter being denoted by an asterisk:

**Submittal of Plans:** Prior to the installation of L. P. gas systems in school buildings, churches, court houses, office buildings and other buildings to which the public is invited, such as cafes, dance halls, tourist courts and parks, plans and specifications for such installations, in duplicate, shall be submitted to and approved by the State L. P. Gas Administrator and before such systems are filled with L. P. gas, they shall be physically inspected and approved by a licensed installer and report made by him to the State L. P. Gas Administrator.

**Report of Accident:** In case of accident at any location where a L. P. gas system or equipment is installed, or any accident involving L. P. gas mobile equipment, the dealer owning, operating or servicing the equipment or installation shall notify the State L. P. Gas Administrator.

**B.8 Piping, Tubing, and Fittings.** \*(a) (After NFPA's data on pipe specifications the following changes are made.) ALUMINUM TUBING SHALL NOT BE USED. No underground piping shall be closer than 25 ft to any well, cistern, cave (storm cellar), cesspool or septic tank and its laterals. In those cases where strict compliance with the distance requirement is impossible, exception may be granted by the L. P. Gas Administrator by prior approval of plans based on the piping being protected against external corrosion by wrapping or by equivalent means.

(l) Piping systems serving appliances in buildings to which the public is invited, such as churches, schools, business houses, tourist courts, etc., shall be tested for leaks as provided for in final test by manometer as set out in Par. B.8 (i), and such test shall be made by a licensed L. P. gas installer at least ONCE EACH YEAR, and a report of such test forwarded to the State L. P. Gas Administrator. The persons or firms owning, operating or controlling the properties shall be responsible for such tests, and the reporting of same to the State L. P. Gas Administrator.

(m) No person, firm or corporation shall connect a L. P. gas tank to any piping without having first determined that such piping complies with the laws of the State of Oklahoma and the rules and regulations of the State L. P. Gas Administrator relative to L. P. gas piping.

**B.9 Hose Specifications.** (e) Any hose for transferring L. P. gas shall be stamped for L. P. gas, LPG or liquefied petroleum gas, also show a working pressure of not less than 250 psig, and all hose shall be permanently labeled at intervals of not more than 10 ft.

**B.12 Filling Densities.** (e) and (f) are two complete tables of maximum filling density for aboveground containers up to and over 1200 wc capacity.

**B.14 Transfer of Liquids.** (i) Portable L. P. gas containers shall be filled only at a place specifically designed and permanently constructed for the purpose and approved by the State L. P. Gas Administrator. (Here follows a definition of a portable container.)

**B.19 Use of Approved Appliances.** \*(c) Any appliance that was originally manufactured for operation with a gaseous fuel other than L. P. gas and is in good condition may be used with L. P. gas, only after it is properly converted, adapted and tested for performance with

L. P. gas before the appliance is placed in use; except, that, no automatically controlled appliance shall be converted for use in public buildings without approval and/or inspection of the State L. P. Gas Administrator.

**B.21 Basement Installations.** (a) No appliance shall be installed in any basement or semi-basement unless it is fully automatically controlled and properly vented and must have the approval of the State L. P. Gas Administrator.

**B.22 All Appliances Over 40,000 Btu Must Carry 100 Per Cent Safety Controls and Be Vented.**

**B.23 Venting.** (a) On all installations, whether public or private, of vented appliances, the appliances must be vented to the outside atmosphere.

(b) In public schools and churches, if the number of Btu's in any one room, total over 40,000 Btu all heaters must be vented.

**B.24 Piping Layout.** This section applies specifically to piping layouts for domestic homes and public buildings.

(a) Piping shall be laid out to run in the most direct manner practicable to insure minimum pressure drop and adequate drainage.

(b) Piping shall not be installed in any location where there is insufficient ventilation to insure rapid dissipation of any escaping gas.

(c) Piping shall not be installed in any basement or semi-basement until plans have been submitted to and approved by the State L. P. Gas Administrator.

(d) Piping shall be installed under a building only where there is adequate ventilation on all sides to insure dissipation of escaping gas before it can collect in hazardous concentrations.

(e) Piping shall not be installed in or through a wall except where a properly designed pipe shaft is provided. This shaft shall be designed so as to allow easy inspection of the piping in place and shall provide complete ventilation.

(f) Piping shall not be installed under a concrete floor slab, but may be installed above the slab.

(g) On all installations in public buildings the piping must either loop the building, or where the piping is underneath the floor, or where the piping is inaccessible, it must be put in conduit with the outside end open for ventilation and the inside sealed, with a manual operated valve placed ahead of each appliance.

**B.25 Penalties.** Section 8, House Bill 729. Any person, firm or corporation violating any of the provisions of this Act, or any rule, regulation and/or specification promulgated thereunder, or installing in this State any L. P. gas system or appliance which does not comply with such safety rules, regulations and/or specifications, shall be guilty of a misdemeanor, and upon conviction thereof such person or the responsible members of such firm or the responsible officers of such corporation, shall be punished by a fine of not more than Five Hundred (\$500.00) Dollars or imprisonment for not more than six (6) months, or by both such fine and imprisonment.

**2.1 Design Working Pressure and Classification of Storage Containers.** (b) Any container sold or installed in Oklahoma for use in this state shall carry a 5 year warranty covering workmanship and material. ‡This warranty shall provide that any container not in compliance with this regulation must be repaired or replaced by the Fabricator at no expense to the Dealer or Customer.

‡This provision is to take care of "pin-hole" leaks in the weld that were not detected at the time of fabrication, and does not apply to fittings.



## 58 to suit its own situation

**2.4 Reinstallation of Containers.** (After the wording "See par. 2.6 (f), the section reads as follows:) Underground containers before being reinstalled must be inspected by the State L. P. Gas Administrator, and installed by a licensed installer.

Underground containers shall be dug up at the expense of the owner at any time at the discretion of the State L. P. Gas Administrator.

**2.13 General Provisions Applicable to Bulk Filling Plants and to Systems in Industrial Plants.** \*(d) Areas occupied by bulk storage containers shall be enclosed by a substantial woven wire fence of not less than No. 12 American Gauge Wire at least 5 ft high, topped by three strands of barbed wire spaced 4 in. apart. Chain link fence 6 ft high with the rough edge up can be approved. This enclosure shall be provided with a locked entrance to prevent tampering by unauthorized persons. Fencing shall not be installed closer than 5 ft to the tank at any point. This fence shall be maintained in good condition at all times.

(e) Areas occupied by bulk storage containers shall be kept cleared of combustible materials, such as weeds and trash, within a radius of 25 ft around the container.

(f) Each bulk storage location shall be provided with at least one approved fire extinguisher of a type suitable for gas fires. Extinguishers of the dry chemical type are preferable. Extinguishers shall have a net content of not less than 15 lb and shall be inspected at least once each year, by an authorized inspector such as Fire Departments or Fire Appliance Company representatives.

**2.16 Painting.** \*All bulk storage shall be painted a heat reflecting color, either white or aluminum. Painting containers red or other heat absorbing colors is prohibited.

**2.20 Lettering Bulk Storage.** (a) All bulk storage installations shall be lettered with the name of the contents and a "No Smoking" sign in letters not less than 8 in. high, with the name of the person, firm or corporation operating the bulk storage in letters not less than 2 in. high. This information shall be placed so as to be readily visible to the public.

**2.21 Grounding.** All bulk storage containers shall be grounded by a separate and adequate ground. The use of connecting piping shall not be considered as adequate ground. The ground shall consist of either a ground rod or a metal grid buried to a sufficient depth to insure grounding of any static charge generated and connected to the tank by means of a copper wire equivalent in area to a No. 10 AWG wire. This ground wire to be attached by any means that will insure a good electrical bond, preferably by soldering.

**3.7 Mounting Containers on Truck, Semi-Trailer or Trailer Vehicle.** (c) In addition to provisions in 3.7 (a) and (b), each container shall be bolted to frame of vehicle at one or more places on each side with "U-bolts" or with bolts extending through plate on container to the frame of the vehicle.

**3.17 Painting Trucks.** (a) All truck and/or trailer tanks used in the transportation of L. P. gases shall be finished with a heat-reflecting surface such as or equivalent to white or aluminum, and shall be maintained in good condition.

(b) All such tanks, in addition to the heat-reflecting finish shall have printed on each side in letters not less than eight (8) in. in height, the name of the owner, person or firm operating the transport unit, and the name and character of the contents of the tanks and the word "Flammable" or "Inflammable" and on the rear of the tanks carry the name of the product, either "Butane,"

"Propane" or "L. P. Gas" and the word "Flammable," or "Inflammable," in light reflecting or contrasting colors with letters not less than eight (8) in. in height.

**3.18 Parking of L. P. Gas Trucks and Transports.** (a) L. P. gas transport trucks or semi-trailers when not in use shall not be parked overnight closer than 50 ft to any building or group of buildings or to any adjoining property line, except where such building or buildings are devoted exclusively to the transaction of L. P. gas business operations. Where property lines are highways or railway right-of-ways, the spacing may be reduced to 15 ft.

(b) L. P. gas transports or trucks shall not be left parked at night on any highway, road, street or alley.

(c) L. P. gas transports shall not be parked beneath or adjacent to any electric transmission line in such position that there is a possibility of a conductor contacting the tank in event of breakage.

**3.19 Filling Unapproved Truck or Trailer Tanks Prohibited.** LPG Form No. 10 (cab card) when properly completed and countersigned by the State L. P. Gas Administrator, shall be evidence that the design, construction, assembly, and mounting of the L. P. gas tank described thereon by its serial number has been approved by the L. P. Gas Administrator for use in the transportation of L. P. gas. Such form also shall authorize the person, firm or corporation whose name appears thereon or their bona fide employees to operate the transport tank described thereon, and further, shall authorize all properly licensed L. P. gas dealers to fill such transport tank with L. P. gas.

No person, firm or corporation shall operate a tank in the transportation of L. P. gas in this State unless such person, firm or corporation has been issued an LPG Form 10, (cab card) authorizing its operation, unless its operation has been specifically approved by a communication from the State L. P. Gas Administrator.

No person, firm or corporation shall introduce L. P. gas into a transport tank unless the operator of the truck or trailer upon which such tank is mounted first displays an LPG Form No. 10, (cab card) countersigned as above provided or a communication from the State L. P. Gas Administrator evidencing that the operation of such tank is authorized.

The LPG Form No. 10 (cab card) is not transferable by the person, firm or corporation to whom it was issued, and is not to be used after the expiration of the fiscal year for which it was issued.

**6.12 Charging Containers.** 3. All ICC containers shall be filled at central location by weight. A pickup truck that meets all of the requirements of Division III and properly equipped with scales may fill ICC bottles at trailer camps.

### Division VIII

(a) The State L. P. gas Administrator and his inspectors, or either of them, shall be permitted to enter upon the premises during reasonable business hours and have access to all books, records, and files of any person, firm, or corporation engaged in the L. P. gas industry in all of its phases.

### Division IX

**9.1. Electrical appliances** such as radio, telephone or any other electrical apparatus, must not be grounded to any L. P. gas system or appliance.

### Division X

**Penalties.** (See Section B. 25 ).

# Liquor & Gas Bulletin

FROM THE OFFICE OF: C. CHERISH DANE, LIQ-GAS ADMINISTRATOR  
NOVEMBER 1959

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November: SAFETY BULLETIN 1959

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## Certificate of Insurance (GENERAL LIABILITY)

LFD FORM NO. 12-A

To: C. Cameron Tate,  
State Liquor-Petroleum Gas Administrator,  
P.O. Box 284, Capitol Station,  
Oklahoma City, Oklahoma.

This is to certify that the:

(Insurance Company) of \_\_\_\_\_ has issued a bodily injury and property damage liability insurance policy as described below. That said policy and all endorsements attached thereto are upon forms identical with those heretofore filed with and approved by the State Liquor-Petroleum Gas Administrator, that said policy is now in full force and effect, and that there is attached to said policy an endorsement reading as follows:

The policy to which this endorsement is attached is a bodily injury liability and property damage liability policy and it further intended to assure compliance by the insured with the applicable statutes of the State of Oklahoma and the various rules and regulations of the State Liquor-Petroleum Gas Administrator as respects covering the plant, equipment, and operations of the insured under the applicable statutes of Oklahoma, including selling or retailing any system, containers, components or appliances used or to be used in this State such as handling, distribution, mixing or dispensing liquored petroleum gases, and in his (its) business of manufacturing, distributing, mixing or dispensing liquored petroleum gases.

In consideration of the premium stated in the policy to which this endorsement is attached, the company hereby agrees to pay any final judgment recovered against the insured for bodily injury to or death of any person or loss of or damage to property of others resulting from the negligent operation, maintenance, or use of property, plant, premises or equipment, and the negligent performance of operations in the manufacture of liquors, or in the business of manufacturing, distributing, mixing or dispensing liquored petroleum gases, within the limits of liability hereinafter provided, regardless of whether such premises, equipment, plant or operations are specifically described in the policy or not. It is expressly understood and agreed that by the execution of this endorsement the Company shall not afford its aid or on behalf of the insured named herein any product, liability or completed operations insurance or any other form of insurance not specifically required by the applicable statutes of the State of Oklahoma and the pertinent rules and regulations of the State Liquor-Petroleum Gas Administrator relating to liquored petroleum gases.

The liability of the Company shall be \$10,000 for damages arising out of bodily injury, sickness or disease, including death at any time resulting therefrom, sustained by one person in any one accident; and subject to the above provisions regarding each person, a total statutory limit of liability of \$20,000 for all damages, including death at any time resulting therefrom, sustained by two or more persons in any one accident; and \$10,000 for the payment of any such final judgment.

Nothing contained in the policy or any other endorsement therein, nor the violation of any of the provisions herein or any provision of the policy, shall relieve the Company from liability hereunder or consent.

The insured agrees to reimburse the Company for any payment made by the Company on account of any claim or suit not providing a benefit of the terms of the policy, and for any payment that the Company might not have been obligated to make under the provisions of the policy, except for the agreement contained in this endorsement.

This endorsement may not be canceled without cancellation of the policy to which it is attached. Such cancellation may not be effected except by the date of the insured giving thirty (30) days advance notice in writing to the State Liquor-Petroleum Gas Administrator, at his office in Oklahoma City, Oklahoma, and fifty (50) days notice to commence to run from the date notice is actually received at the office of said Administrator.

Attached to and forming a part of Policy No. \_\_\_\_\_ issued by the \_\_\_\_\_  
(Company herein called Company), of \_\_\_\_\_  
to \_\_\_\_\_  
herein called insured, of \_\_\_\_\_  
this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.  
CounterSigned by \_\_\_\_\_ (Authorized Company Representative)  
**DESCRIPTION OF POLICY**  
Insured:  
Partnership or Corporation  
Number:  
Date:  
Expiration Date:  
(Insurance Company)  
(Date):  
(Authorized Representative)  
(Address):

3. Annually, there is an inspection of all rolling stock to make sure it complies with safety standards. This test is not provided for

BUTANE-PROPANE News

in the statutes, but the administrator is empowered to demand it under a section which states: "It shall be the duty of the administrator to inspect, or to provide for the inspection of, any LPG systems, containers, apparatus, and/or appliances installed in this state, whenever in the discretion of the administrator, and deputy, or any inspector such inspection is necessary to effectuate the purposes of this act."

A "cab card" or license for the vehicle is issued to all vehicles that pass this inspection. These expire on August 31 of each year, and it is unlawful for a driver to operate a vehicle and a fuel supplier to fill it if the cab card is out of date. The statutes provide penalties for a violation of such rules; they are misdemeanors, and punishable as such.

4. When making industrial installations utilizing storage containers of more than 2000-gal capacity, he must submit plans and specifications to the administration in advance of construction.

5. He must also "prior to the installation of liquefied petroleum gas systems in school buildings, churches, court houses, office buildings, and other buildings to which the public is invited, such as cafes, dance halls, tourist courts and parks (submit), plans and specifications . . . in duplicate" to the



Pate points with pride to the membership certificate in the Oklahoma LPGA. His office works hand in glove with the association.

administrator, and the installation shall be made by a licensed LPG installer and "physically inspected and approved by one of the field

men from the administrator's office" before being filled with gas. Both these provisions regarding installations are set forth in the written rules and regulations.

6. He must promptly report any accident involving equipment he owns, operates or services.

Pate himself (or a deputy, if he cannot physically be present) pays a visit to the scene of every reported accident.

This is, in broad outlines, the format under which Pate's office operates. But within the confines of his authority, he does much more to assure safety in LPG operations throughout his state. He has a chief deputy, two deputies and three inspectors; these latter men work out of their own homes, each being located in a separate district. They are empowered to make inspections, and if they find an unsafe installation, they "red-tag" it. So long as the tag is on it, the tank is not to be filled. A dealer who defies this order is subject to severe penalties as well as making himself liable in a civil action.

According to Pate, even if the tag has been illegally removed, the dealer who fills the tank may still be found liable (a court precedent is cited). However, if the dealer heeds the message sent out from Pate's office (Pate regularly bulletins members listing tanks that have been condemned) he could hardly plead ignorance of the facts.

Pate also ordered an inspection of all dealers' and industrial bulk storage last year. The inspections were carried on during July and August.

Results were good, according to the administrator. "With few exceptions, plants were up to standard or could be made that way with very little time and expense. We did find a few light-duty fittings, a few tanks without excess-flow valves, some plants without fire extinguishers, and situations of that sort.

"The most common violations were the lack of relief valves in the wet lines between shut-off valves, and sub-standard fencing."

As in all his directives, Pate gave dealers ample warning before making the inspections so that they could get their houses in order.

"The idea is not to catch people,



This bulletin board carries "horrible examples" of unsafe LPG systems. The state inspectors and dealers throughout Oklahoma are constantly on the alert for such potential killers as these.

but to make installations safe," says Pate. He knows that, humans being somewhat less than perfect, some improvements will always need to be made before inspection time rolls around.

Periodically, as time permits, he undertakes a special drive on potentially unsafe spots. An outstanding example of this was his all-out attack on unsafe underground tanks. Oklahoma has at least 27,000 such tanks, and some have been in the ground for years.

"In our investigations of accidents over the past several years, we found that an overwhelming majority were caused by underground storage or piping that had been exposed to adverse soil conditions for a number of years," says Pate.

"The only way we could cut down on these accidents was to inspect as many tanks as possible."

How could this be done? The customers owned the tanks. The dealers had no direct responsibility.

In a bulletin issued in January 1957, Pate outlined his proposal to dealers. Each was asked to list all his customers who had underground butane tanks. With this list in hand, he would write to every customer explaining the hazard.

"We will suggest that the customer dig the tank out of the ground and notify us, then we will inspect the tank without charge and furnish an inspection sheet showing that the tank is in good condition," he announced. "This will relieve the dealer of the responsibility."

This program might have had



## Safety problems . . . Pate reaches consumers through dealers



Records are kept on every dealer in the state. The rotating file which the clerk is using contains an individual card for every dealer, on which is noted (among other things) the expiration date of his insurance. A certificate of insurance renewal is required before the administrator will grant a license renewal.

serious repercussions if some dealers had replied and others had not. So Pate did not make a move until every one of the dealers licensed in the state had submitted his list. It was July before all the lists were in.

Thousands of tank owners responded. "Since the letters went out we have inspected approximately 2350 underground tanks," says Pate. "About one-third have been condemned."

Many other tanks were voluntarily replaced by owners without any inspection. "I would estimate at least 9000 were replaced," says Pate. He bases his figure on a comparison of tanks fees collected in 1958 and 1959 vs. 1957.

"To these people, the letter was a reminder of a potential hazard. They decided there was no point in postponing the inevitable. Their tanks were old. Even if they passed the test, someday they would have to be replaced. So why not now?"

The following year, Pate undertook another program for getting to the ultimate consumer. This was in the form of a mailing titled, "Safety Hints for Users of Butane or Propane." It contained a list of 28 one-sentence, easily read "do's and don'ts."

The mailing pieces were furnished to dealers who requested them, for mailing by each dealer to his own customers. Each was marked "compliments of . . ." and space was left for insertion of the dealer's name.

Sixty-five per cent of the dealers responded and some 95,000 of the pieces were sent to them.

The medium for communications with the dealers is the monthly Safety Bulletin, started by Pate in 1955. It's a convenient vehicle for carrying notices of tanks condemned, for reporting on accident investigation findings, for notifying dealers of forthcoming inspections, and for putting out frequent reminders about the hazards inherent in certain practices.

The bulletins pound hard at the practice of filling bottles without weighing them. Other violations are also pointed out periodically. This method shapes up into a continuing on-the-job safety education program. By studying and abiding by the safety rules in the bulletin, a dealer can be pretty certain he's within the law on all his activities.

It's a simple, mimeographed two-page sheet, but it is effective in getting its message across. It's also won a measure of fame outside the boundaries of the state. The mailing list, which is growing every year, includes one subscriber from South Africa.

Another medium used by Pate is the state association magazine. Each issue carries a safety bulletin prepared by the administrator, and all condemned tanks are listed as well. The state office is a member of the association and works closely with it.

This is not surprising in view of the philosophy under which the state office functions. It's there to help dealers, not shackle them. As the industry prospers, so will the importance of the office grow. It is completely self-supporting through the fees that are collected annually. In fact, it has been able to build up a surplus each year which it turns into the state's general fund.

How effective, in terms of the safety record, has it been?

Pate cites the decreasing accident rate as substantial proof of its effectiveness. The rate has dropped consistently, year in and year out. Using 1955 as a base, rate reductions were 8 per cent in 1956, 20 per cent in 1957, 25 per cent in 1958, and 34 per cent in 1959.

"We attribute a large portion of this decrease to our licensed installers (of which we have 970) and our inspectors, who are constantly finding faulty or hazardous installations and remedying them or having them remedied.

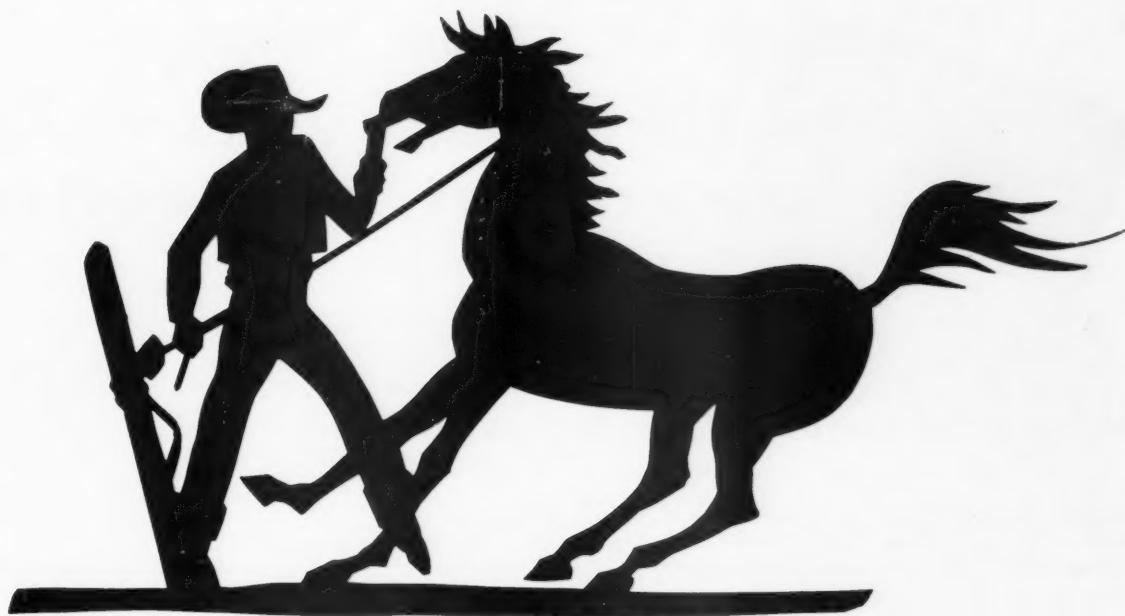
"We also feel it has been brought about in part by our requiring that all systems and public buildings be tested at least once each year by a licensed LPG installer.

"Insurance rates have been reduced anywhere from 20 to 50 per cent. As the insurance companies learned how the industry was being policed and the type of equipment that was required for handling LPG, rates became stabilized and more companies showed an eagerness to write LPG coverage." ■



**Waitin' on the levee for the LPG** might have been the spirit-rallying song of Quincy, Ill., during the spring floods. When the Mississippi crested at an all-time high of 24.3 ft, it put the Cylindro Gas Co. bulk plant out of operation for ten days. Owners Bill Stock and John Norris stationed a tank car on high ground, and kept all customers supplied. Here, Stock and foreman Hubert Warning prove that a course in small boat handling is a prerequisite for the LPG business as they round up floating 100-lb cylinders.





## *... "what the doctor ordered"*

Horse, man or company must have the right medicine to stay healthy. For an LP-Gas dealer there is no better prescription than a Sid Richardson contract. It is "just what the doctor ordered".

With a Richardson supply contract you can cure many problems, because—

We have no company-owned wholesale or retail outlets to compete with you.

We have voluntarily lowered our customers' contract price to meet competition

We have only one obligation — the success of our customers. Their success means our success.

## ***Sid Richardson*** **GASOLINE CO.**

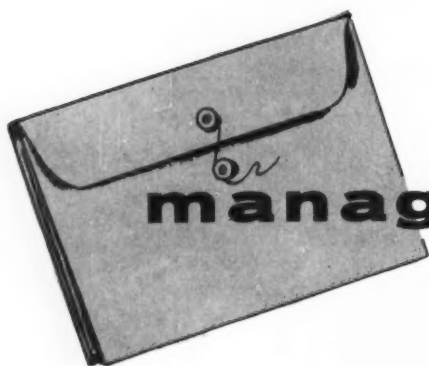
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ATwater 3-7443  
INDIANAPOLIS, INDIANA

MARVIN L. DOSS  
3148 SANDEFER  
ORchard 4-2965  
ABILENE, TEXAS

B. E. PATTON  
6444 XERXES SQ.  
WAlnut 7-8092  
MINNEAPOLIS, MINN.



## management portfolio

### What's the useful life of cylinders and tanks?

Are you "writing off" cylinders at the end of ten years? Or has your local Internal Revenue Service office extended their "life" to 15 or 20 years? Are you following the rather well-established practice of a 15-year depreciation basis for customer bulk tanks?

BPN's tax expert, E. H. Mitchell, this month outlines some of the steps you can take to insure that your depreciation allowance is "reasonable."

The Internal Revenue Code gives you, as "a depreciation deduction, a **reasonable** allowance for the exhaustion, wear and tear," and "obsolescence" of equipment used in your business.

The familiar depreciation formula is: cost or other basis **minus** estimated salvage value, **divided** by the useful life in terms of years, **equals** a reasonable annual deduction under the straight line method. The "reasonableness" depends upon the accuracy of the three elements, basis, salvage value and useful life.

We shall briefly discuss here the "useful life" factor. It is the most difficult, the most important, and the most controversial. Physical life is not necessarily synonymous with useful life.

Treasury Bulletin "F," last revised in 1942, and intended solely as a guide, contains schedules of so-called "normal" useful lives of more than 4,000 depreciable items. Many of these periods are now outmoded, some too long and some too short. They are not mandatory.

While Bulletin "F" is of no direct help to you, the following statement appearing in the 1959

**COUNSEL  
AT YOUR  
ELBOW**

reprint may be of interest. "Taxpayers may determine reasonable periods of useful life . . . on the basis of their particular operating conditions, experience, and informed judgment as to technological improvements and economic changes . . . (but they) should be **prepared to substantiate** the periods so used."

Let us assume that you reported a 1959 depreciation deduction on one type and size of cylinder, basing the amount upon a useful life of 12 years. Assume too that the director's representative now threatens to recommend a 1959 deficiency assessment against you computed on an average useful life of 20 or 25 years. We will further assume that you are willing to spend some time, effort and money in an attempt to convince the Service that your 1959 estimate was reasonably accurate.

You may proceed as follows: **First**, convince the visiting representative. If this fails, **Second**, apply to the Tax Court for a redetermination, **or Third**, let the proposed deficiency be assessed, pay it, and then file a refund claim. If the claim is rejected, **Fourth**, you may then file suit for its recovery in a U. S. Court.

Two other alternatives are still left. We now assume that, because of some factual change, your evidence for 1960 is much stronger than that applicable to prior years. Your procedure then would be either to wait until the time is ripe and successfully pursue one or more of the above steps for the year 1960, **or**

**Fifth**, apply at once to the Commissioner in Washington for a **special ruling**, **or**

**Sixth**, immediately apply, in quadruplicate, to your district director of Internal Revenue for a written agreement on the estimated useful life, salvage treatment and method and rate of depreciation for the current and **future years**.

This application must contain, among other things, all facts and circumstances pertinent to and supporting your estimates. They should be drafted and presented by your tax counsel.

If nothing in your application to the director requires "investigation or correction," the director will prepare the agreement on Form 2271 and send four copies to you for signature and return. He will then sign all of them and return two. One of your two copies must be attached to the next return filed. The agreement is binding upon **both** parties until modified by another, similar agreement.

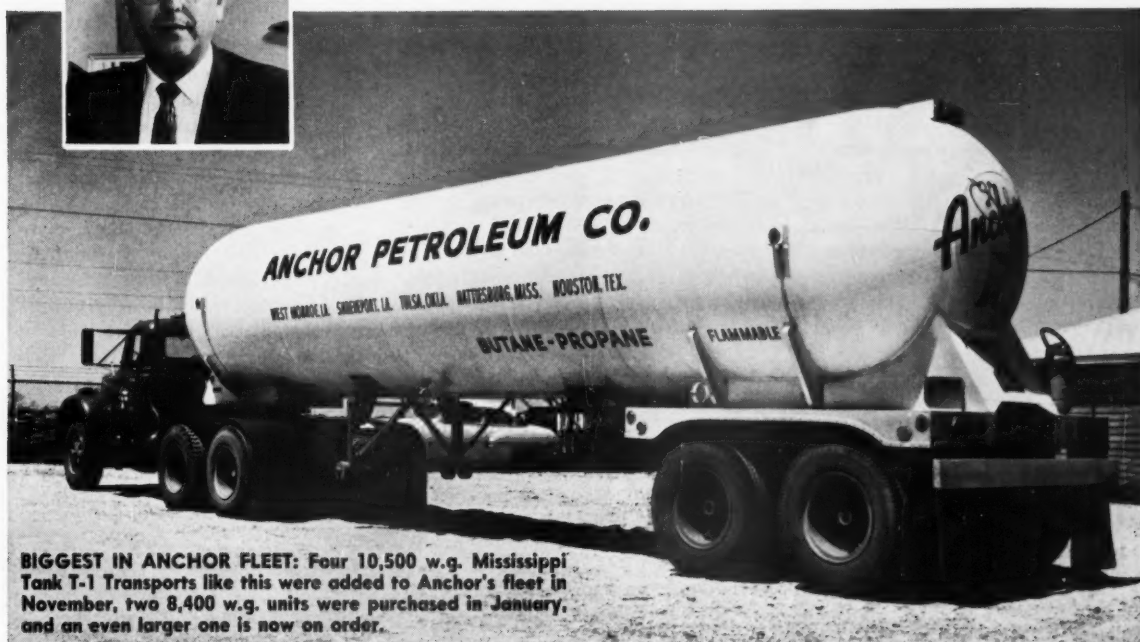
It is apparent from the foregoing that exactly the same evidence is required of you, regardless of which method of procedure you choose to pursue.

Here are brief, but well ex-

# *"For top payload, strength and dependability Anchor chooses MISSISSIPPI TANK T-1 Transports"*



... says C. H. Muncy, Ass't to Vice President  
ANCHOR PETROLEUM COMPANY, Tulsa, Okla.



**BIGGEST IN ANCHOR FLEET:** Four 10,500 w.g. Mississippi Tank T-1 Transports like this were added to Anchor's fleet in November, two 8,400 w.g. units were purchased in January, and an even larger one is now on order.

Dependable service is the foundation on which Anchor Petroleum was built. So it's only natural that officials of the company, one of the largest independent producers and marketers of petroleum products in the country, turned to Mississippi Tank when they needed really big transports that could be relied on to uphold this tradition. C. H. Muncy, who makes Anchor's fleet buying decisions, carefully studied available equipment from every angle, then chose Mississippi Tank T-1 Transports. "Mississippi Tank units are light, yet there is no sacrifice in strength," says Mr. Muncy. "And the equipment has more than lived up to our expectations. In over five months of constant use during our heaviest season, the transports have required only minimum maintenance and have consistently carried propane loads of 90%!"

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Without obligation, RUSH literature on:

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Company .....  
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City and State .....

pressed, 1960 Internal Revenue Service instructions for determining the estimated, useful life of any piece of property.

"There is no average useful life (of a given article) . . . applicable to all businesses." Useful life "depends upon such things as the frequency with which you use the article, your policy as to repairs, renewals and replacements, the climate in which it is used (and) economic changes, inventions, and other developments within the industry and (in) your trade or business. You must determine (such useful life) . . . on the basis of your particular operating conditions and experience. If your experience is inadequate, you may use the general experience in the industry until your own experience forms an adequate basis for making a determination."

These instructions are fair and deserve careful study. But, they are general and far from all inclusive.

The most convincing evidence is that derived from actual and **recorded** experience. Useful life can best be established by (1) a number, or the month-and-year, **permanently stamped** upon each cylinder and tank at time of acquisition; (2) a concurrent and permanent written record of each number and corresponding date; and (3) a permanent, written record of the date such stamped article is replaced, made and entered at the time of each replacement. These **replacement** records would have to cover a sufficient number of consecutive years so as to furnish a fair and representative, **average**, useful life. While there may be other types of convincing evidence, the type described would be the perfect answer to your

trial lawyer's prayer.

If your experience does not now cover a sufficient number of **replacement** years, it is inadequate. You must, for the time being, rely upon general, useful life experience in the industry. This **should** be obtainable, with convincing proof, from your state association, provided (1) enough members insist that the study be made, and (2) there are in your state sufficient LPG dealers (with qualifying replacement experiences) ready and willing to co-operate. The same procedure could, of course, be followed by your national association, should it become advisable.

A few successful test cases, carefully selected by a committee of experienced tax attorneys, could conceivably be a profitable investment, tax-wise, for all concerned. Other industries have tried it with no regrets.

## Six reasons why businesses fail

Even in the most prosperous times, and under the most favorable conditions, businesses continue to fail. Why?

### MANAGEMENT HANDBOOK

Management mistakes are one answer. Here are just a few of a whole collection of well-documented shortcomings that have led companies into bankruptcy.

**1) Inadequate records**—The most common of pitfalls for the small business, this one is characterized by masses of unsorted papers jammed into boxes, files, and safes. Many firms hire top personnel or contract for professional services to handle various other aspects of their business, but practice the false economy of poor, incompetent, outdated, or virtually non-existent bookkeeping systems.

**2) Cumulative losses**—Seemingly insignificant little financial leaks—unless traced and stopped—can quickly add up to a substantial breach in the bank account. Often, management is unaware of such

leaks, quite possibly because suitable reports are either missing, too cumbersome for analysis, or too long delayed in reaching the proper person.

**3) Neglected provisions for taxes**—Most people are aware that tax problems can get complicated in a big hurry, but many small businessmen still fail to turn over their tax work to the professional. That professional should be the best legal and accounting service available. A mistake by someone who did not fully understand tax laws has led to the demise of more than one business. Tax counsel should not be a part-time thing either. If you plan on bidding on a big load, make sure you are fully aware of all the tax aspects involved. To ignore them might prove fatal.

**4) Expansion beyond resources**—While money would seem to be the biggest stumbling block here, the actual fact is that out-grown bookkeeping systems provide the most trouble on this score. All too often, this could have been avoided, for many firms try to make the old system do to save money. Others, of course, are unaware of their inadequate systems until too late.

**5) Excessive fixed costs**—All too

many companies do not know the costs of their plants, equipment, or operations. Many firms, for example, have their employees construct things during slow periods, and charge off such labor to operating expenses, rather than to capital expenditure. This, they reason, is getting something for nothing. The tax man, however, may take a different view and may order that an appraiser be retained to evaluate the actual capital assets. Operating costs can get 'way out of line unless reports are complete enough to give the proper perspective, but brief enough to be quickly digested. Adequate liaison work can also mean more uniform costs, without great variances from operator to operator.

**6) Lack of knowledge of the business**—No two types of business are exactly alike. Some people can learn some new businesses very quickly. Others never make it. Some businesses don't require a great deal of technical knowledge, just sufficient grasp of the overall picture to hire competent personnel. In many cases, the new management can learn what it needs to know as it goes. In other cases, that may be too late.

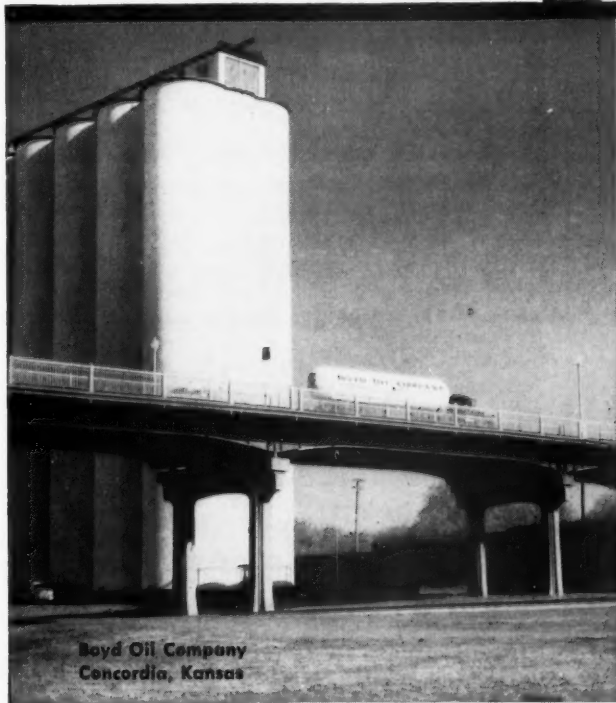


# EAST, WEST, NORTH OR SOUTH— THE STORY'S ALWAYS THE SAME

## Cities Service Distributor's summer sales booming

Most distributors are concerned about their slack summer sales but not Tri-Gas. The attractions of Lake Michigan and the National Music Camp of Interlochen triple the population of Traverse City and keep Tri-Gas operating at peak load.

During winter Tri-Gas keeps the propane using residents warm... even with the 150 inches of snow they received last year. Leon Overholt, President of Tri-Gas, states, "Cities Service has been our supplier since we started 12 years ago. Service has been excellent and delivery has never been a problem since we are practically sitting on the Cities Service 20-million gallon underground storage facilities at Lowell, Michigan."



## For 5 days Boyd Oil supplied Concordia, Kansas with their only source of gas

It was summer and the river went on a rampage in Concordia. The natural gas pipeline was torn apart. Townspeople could not cook... restaurants had the same problem. The dairy in town needed hot water... a hospital was without cooking facilities. The town turned to Boyd Oil and Hugh Boyd put in a call to Cities Service for an emergency order of LP-Gas. Boyd Oil mustered every piece of spare equipment and worked day and night successfully serving the crucial spots with gas.

Regarding Cities Service, Hugh Boyd says, "I've never had another supplier and see no need for one. The service from Cities Service has always been great and I know I can count on them when an emergency comes up."



3435 Broadway  
Kansas City 11, Missouri

20 N. Wacker Drive  
Chicago 6, Illinois

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South Bend 1, Indiana

500 Robert Street  
St. Paul 1, Minnesota

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Cleveland 15, Ohio

7730 Carondelet Ave.  
Clayton 5, Missouri

170 University Ave.  
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You make faster deliveries two ways with Hannay reels. Full-flow inlets and outlets deliver more product at faster flow rates with minimum pressure loss. Hose is unwound faster for deliveries on either side of the truck. With Hannay Guidemaster, push-button level rewinding is almost automatic and is completely explosion-proof.

Costs go down, profits go up when you deliver more product and handle hose faster with Hannay reels and Guidemaster. You'll find the right reel for your equipment in the big Hannay LP-Gas Delivery catalog. Send for your free copy today.



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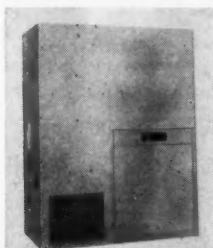
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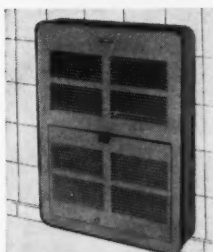
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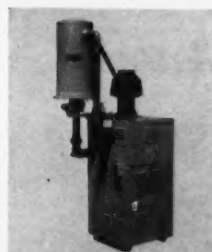
**Domestic  
Air Conditioning**



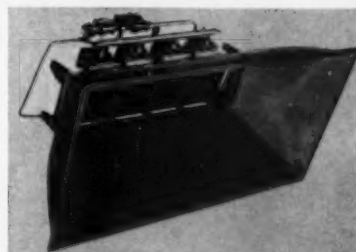
**Motel Heating &  
Air Conditioning**

# TAKE OFF THOSE BLINDERS

**Sell the  
whole  
heating  
market**



**Pool Heaters**



**Commercial & Industrial  
Heating & Air Conditioning**

**N**EW markets broaden the road to success. Every new market you enter is another chance for success, as long as you keep the total number within the bounds of reason. It's that simple.

Yet many, many people—including some LPG dealers—seem to operate as if they wore blinders, never looking around for new markets, they doggedly pursue the same ones year after year in the same way. Those proven markets may be their best bet for success; but again, they may not.

Time was—and is was not long ago—when LPG, itself, was a new market. If no-one had looked around long enough to investigate the possibilities of LPG, you wouldn't be in business today. The same goes for those who investigated the domestic LPG market.

Just about every single LPG dealer today has domestic customers and 92 per cent of all dealers with domestic customers have house-heating customers. But the dealer has a long way to go before he saturates the househeating market. On the average, only 41 per cent of his domestic customers use LPG for househeating. In the South, the Midwest, and the Rockies, this average goes up to 44 per cent, 47 per cent, and 50 per cent, respectively. But in the East it drops to 26 per cent and in the West, to 29 per cent.

Thus, while, LPG for househeat-

ing has come a long way, it still has a long way to go. It's an excellent ever-expanding market that should eagerly be sought. But, it no longer has the excitement and challenge only a new, relatively untouched market can offer.

New markets require an imaginative approach. New ideas and new methods, must be tried. What proves successful in the new markets can then be tried on the old, giving you a new slant all around. Thus, even if the old markets continue to be the most lucrative, a venture into new markets still really helps your business. But that's the least you benefit.

Remembering LPG, itself, was a new market just a few years ago, think about the most you can benefit, while we examine these four challenging, relatively -untapped markets:

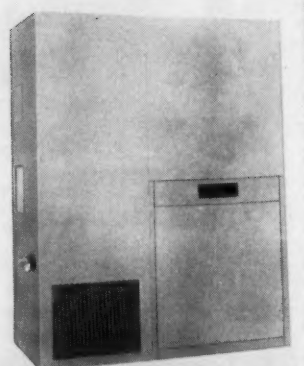
- Domestic air conditioning — a variety of gas-fired equipment has arrived on the scene just when consumer acceptance is about to create a volume market.
- Commercial and industrial heating and air conditioning—the possibilities seem virtually limitless, and you can sell this one on a cold-hard-facts, dollar-and-cents basis.
- Motel heating and air conditioning—really a segment of the preceding market, this one has its own special conditions and rewards, enables LPG men to hitch their bobtail to another fast-growing industry.
- Swimming pool heating—booming in part with the motel market, but mainly on its own, this one has exploded 175,000 per cent in the last 20 years, should increase another 400 per cent in the next ten, so now it must be taken seriously.

If you're beginning to think that you ought to diversify your heating efforts, that you can't afford to let good loads go begging, take off those blinders! Investigate these four "new" markets on the following pages of BPN's annual heating issue.

## TAKE OFF

## THOSE BLINDERS!

# INVESTIGATE ►



**Domestic  
Air Conditioning**

**A**FTER stumbling along for years at an unspectacular pace, air conditioning is catching on with a rush. And—with perfect timing—a variety of gas-fired equipment has arrived on the scene. So, we have the equipment to do the job just when consumer acceptance is about to create a volume market.

Today, 5½ million U. S. homes have some form of air conditioning. And more than one out of seven of these were air conditioned last year!

At least another three-quarter million homes will put in air conditioning this year. Of these, more than one-fourth—200,000, in round numbers—will have central systems. Most will be in new homes.

Central air conditioning is now a mass-builder item. Developers are putting up air-conditioned tract houses 400 and 500 at a crack. FHA is apparently catching the fever having been quoted that non-air conditioned new homes will be substandard in five years, no matter where they are located!

That may or may not be true, but it would seem that the volume market is only waiting for a dash of the super-salesmanship that so successfully sold hi-fi to the tone-deaf.

The market for air-conditioning is everywhere. People who have lived in both places know that summer heat in New York city can be as unbearable as desert heat in the Southwest. Comfort is not simply

a function of temperature. It's also a matter of humidity and of day-to-night temperature differentials.

Last year, the weather bureau created a stir with its "Discomfort Index." Using temperature and humidity readings in a series of computations worthy of a nuclear physicist, it came up with an index which told you whether you should be uncomfortable. The less mathematically inclined use a simple adaptation, adding together temperature and humidity. If they totaled less than 150, you were comfortable; if more, uncomfortable. This is hardly a universal yardstick, for 120 deg. is just plain uncomfortable, even with no humidity.

The comfort index, however, can be a useful selling tool. A record of last summer's combined readings (obtainable from your weather bureau) can be made into a strong reminder of the agony your prospects face in the months ahead. It will also be useful to emphasize the importance of humidity, if it needs to be emphasized in your area.

A complete air conditioning system does much more than simply cool the air. The American Society of Heating and Air Conditioning Engineers offers an apt definition: "Air conditioning is the process of treating air so as to control its temperature, humidity, cleanliness, and distribution to meet the requirements of the conditioned space."

Much of today's air conditioning is with window or room air conditioners. Obviously, such units do only part of the job called for by the ASHAE definition.

One big thing that has held back air conditioning has been cost. People who turn on their furnace at the drop of a degree and take for granted \$300.00 - per - season heating bills would rather roast than invest in air conditioning. How much is it worth to avoid being done to a turn?

Quoting operating costs can be a misleading game because every market is different. But an example should be helpful.

David Kerr of Southern Union Gas Co. has figures for his well-insulated 2265-sq ft home in Dallas. In January, when degree days in Dallas totaled a very reasonable 628, his heating-only gas bill was \$21. Thirty thousand ft. of 1000-Btu gas, at 70 cents per Mcf, was used. In July, the gas needed to keep cool cost only \$14. And Dallas ranks high on the Discomfort Index. Kerr neglects to say just how much gas was used to do the latter job, but adds that the utility has a "promotional rate" for summer air conditioning.

Nevertheless, the dealer could look at the other side of the coin and recognize the revenue potentials. You can afford a promotional rate with a real load balancer like this. For a minimum-sized central unit of 3½ tons, input is about



In celebration of our 60th year of world-wide progress . . .

# A Genuine Coleman gas-lite

Yours to give now as a  
"buyer's bonus" when  
you install



## America's Only Bonded Line Heating and Air Conditioning

This new Coleman Gas-Lite is the key to the most complete and most exciting business-building program ever offered through heating and air conditioning dealers. Most complete because it includes every imaginable aid to selling. Most exciting because it gets an enthusiastic response from everyone in the market for heating or air conditioning.

Here's the plan. As an anniversary salute, we're making it possible for you to offer a genuine Coleman Gas-Lite to your customer with the installation of any Coleman central furnace, wall heater, floor furnace or air conditioner. It's an offer your prospects will go for when you give them the lamp as a bonus for buying now! For more information, use the coupon below or call your Coleman distributor for your complete program kit containing full details—right away!

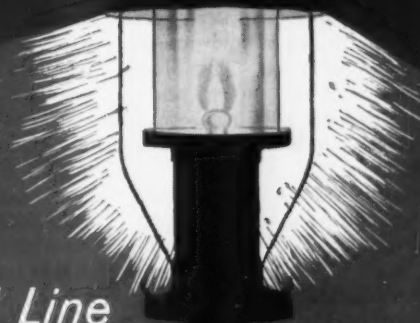


Best selling tool of all—you offer this exclusive \$500 bond with every unit you sell

Coleman's Gas-Lite promotion will be announced to home owners in the March 26 Saturday Evening Post



Also makers of famous Vit-Rock water heaters, Decorama space heaters, Coleman lanterns, camp stoves, jugs and coolers—mobile home heating and air conditioning



Works on any gas—installs 4 ways  
Can be mounted on post (as at left)



Can be mounted on table



Can be mounted on wall with decorator bracket

• The Coleman Company, Inc., Wichita 1, Kansas

Quickly send more information on your Gas-Lite promotion.

• Name \_\_\_\_\_ Title \_\_\_\_\_  
• Firm Name \_\_\_\_\_  
• Address \_\_\_\_\_  
• City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

80,000 Btu. Such a unit is sufficient for six average-sized rooms. Many homes need 5 tons of cooling capacity, requiring around 120,000 Btu input.

If all-year air conditioning has not been exploited in past years, it was not the fault of the LPG dealer. Until recently, only one line of domestic equipment was available in marketable quantities, and that was high priced and inadequately merchandised. That line, Servel, was acquired several years ago by Arkla, and now has both a better price and more aggressive merchandising.

Originally, Arkla's "Sun Valley" units were allocated to utilities on a subscription basis, but for well over a year production has been geared to take orders from dealers.

Recently, Arkla augmented its line of central units with a remote, cooling-only model. And, Arkla has now been joined by some promis-

ing newcomers, who add that element of competition needed to make gas air conditioning go.

Bryant Heater is in the gas air conditioning business now, having announced a unit a year ago. This was something new, a completed self-contained add-on unit installed outdoors. Only plastic lines, to carry the chilled water, and a coil, mounted in the plenum or ductwork, are needed to hook this system into an existing furnace. The installation is not cheap, however, since considerable labor is still required.

This spring, other new entrants have appeared. Raypak, which makes central heating boilers, came out with a companion piece, a water chiller for hydronic systems. Emphasis is going to be placed on radiant panel installations.

Shortly afterward, Vector Engineering Contractors announced its "Gas-cool" compressor-type system,

utilizing the Continental internal-combustion engine developed under AGA's big air conditioning research program. This is also an add-on.

A number of the AGA projects are still under way. As they come off the test line, manufacturers will be licensed to produce them. If only two or three of the projects prove successful, a number of manufacturers should be coming into the field, since licensing is not an exclusive basis.

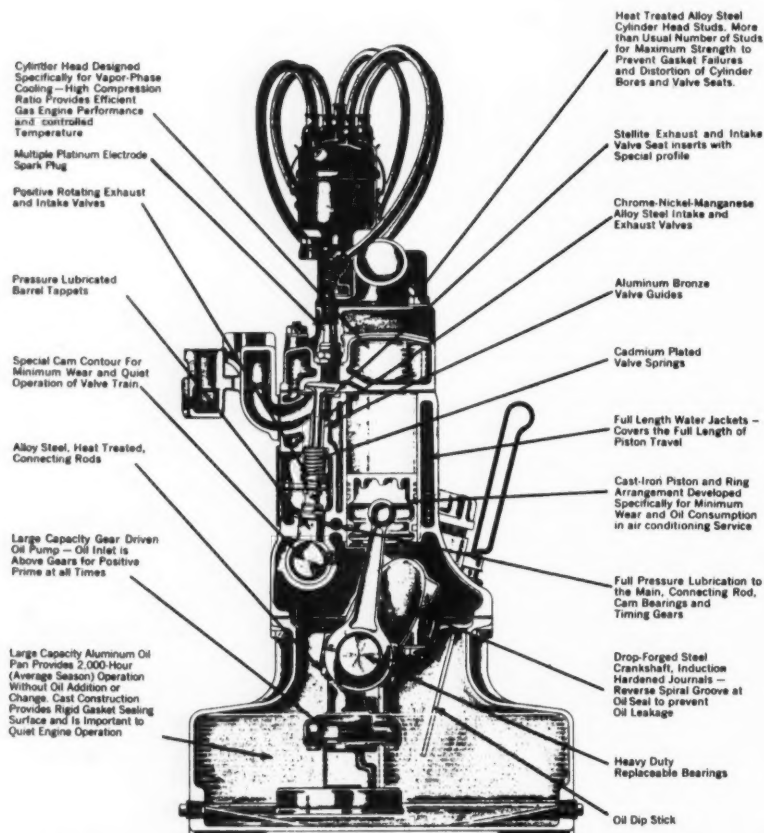
All of this is good news for the LPG dealer. Even if he can't get the units he wants right away, it's not too early to begin laying the groundwork for a going air conditioning business.

At the same time, any delay is an open invitation to the electric competition to bring in its sputtering heat pump, which has already been field tested—on poor Mrs. Consumer. Good or bad, this device already has a wedge-toed foot in the door.

The add-on types of gas air conditioning are particularly exciting for the dealer with some good central heating loads. No longer must he persuade the customer to part with a perfectly good central heating unit so he can be comfortable the year around. This sort of business has been electricity's province for too long. But now the same type job can be done with gas and, we hope, better and cheaper.

Vector, for example, claims its unit will operate 61 per cent cheaper than electric systems. Noise, which has been the bugaboo with gas engine-driven compressors, is said to be cut way down by a fibre-glass insulated cabinet, a special muffler, and vibration dampeners. Assuming that Vector has followed AGA's prototype faithfully, the new unit should have long life and excellent performance. These were the goals of the AGA research, and the project was not finished until the prototypes had met them.

New construction is the big market for Arkla. In the past year, the company has landed new tracts with units ranging from 200 to 500. This sort of sale demands co-operation with the builder and architect and Arkla will work closely with you. The company also offers expert engineering and con-



Here, in cross section, is the heart of the new "Gas-cool" air conditioner by Vector, the engine developed by Continental Motors under AGA auspices. This four cylinder compressor is said to use less than 1/5 gal. per ton-hour. A photo of this engine mounted in the air conditioner cabinet appeared in last month's new product section.



## *Introducing the Arkla* **VAPORGLIDE**

Arkla-Servel proudly announces a design and engineering vehicle which:

1. Gives  $\frac{1}{3}$ rd more power without pistons or valves.
2. Provides lowest ownership cost...full 5-year warranty.
3. Is vibration-free...never needs a tune-up.
4. Has double and triple normal life expectancy, because there are no moving parts to wear out.
5. Won't lose capacity or jump operating costs with age, because it has no efficiency-robbing friction.

No, that's not a space age automobile...it's the Arkla-Servel Sun Valley All-Year gas air conditioner, as it compares to conventional electric central system air conditioners.

If we were really describing a new auto, you'd probably never buy anything but the Arkla model. That's what we think about modern Arkla gas air conditioning, too.

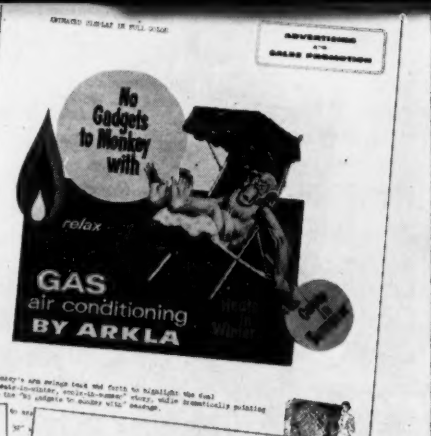
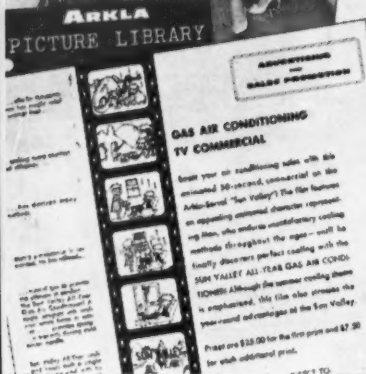
And, if you find the comparisons a bit hard to believe, we respectfully invite you to talk to your local gas company, or write Arkla Air Conditioning Corp.



MAGIC **GAS** AIR CONDITIONING



ARKLA AIR CONDITIONING CORP • SHANNON BLDG. • LITTLE ROCK, ARK.



A wealth of material is available to promote air conditioning, as illustrated by these pages taken from Arkla's new, 3/4-in.-thick books of aids to help dealers sell air conditioning. From left to

right are (top) a selection of air conditioning photos, newspaper ads, (bottom) television commercials, displays, customer booklets, and postage meter plates. Other promotion aids are available.

ducts schools for its dealers.

However, you must still sell the equipment. And, since it's not cheap, order-takers will find themselves twiddling their thumbs. The competitive sales pitch is all-important.

How are you going to beat out electricity? If you're selling Arkla's absorption equipment, here's the pitch, right from the source. Says Arkla:

"Gas air conditioning is better for several reasons.

"First, it is so simple. An absorption air conditioner is similar to a coffee percolator and the basic workings of the entire system revolve around the five physical properties of nature: (1) heating under a vacuum, (2) gravity, (3) a restricted tube, (4) absorption, and (5) cooling by evaporation. The absorption air conditioner uses a simple physical process which has no moving parts to wear out. It should last the mortgage life of the home.

"Second, it is economical. A gas air conditioner is much less expensive to maintain and its service life is far greater. Having no moving parts, it operates with the same economy day after day, year

after year. Comparing actual figures for operation, the electric heat pump averages \$60 per year for maintenance and service, whereas the absorption air conditioner averages \$13.50. The electric air conditioner has a 7 per cent failure rate in warranty for compressors, compared to 0.3 per cent for the gas unit. Finally, the estimated service life of the compressor is 8 years compared to a proven life of 13 years for the gas equipped.

"Third, gas air conditioning is more effective. An air-cooled electric heat pump rated at 5 hp at 95 deg. produces an average of 3 1/2 tons of cooling at that temperature, as does the comparable Arkla Model 500. However, when ambient (outside) temperatures rise to 105 deg., the heat pump has dropped to an effective horsepower of 3.2 and is producing less cooling, while the Arkla unit suffers no such drop. The reason is that in the gas air conditioner, with its enclosed water system, the amount of cooling available is based on the wet bulb rather than the ambient temperature. Therefore, the gas unit has the capacity when it is needed the most, on hot days."

There you have the present pic-

ture on air conditioning. One thing remains to complete it: putting yourself in it. This has not been easy, nor will it be easy in the future. Arkla has several good suggestions:

- First, a financing plan must be made available to the customer.
- Second, a "distributor or other major interest in the L.P. gas market" should act as a distributor for gas air conditioning so prices can be brought down to the lowest level possible "when deliveries are fairly immediate in the area served."
- Third, the equipment should be sold on a break-even basis with the customer tied up for purchase of LPG for "at least a year."
- Fourth, dealers must find some means of designing and applying air conditioning systems into new construction in their areas. ("Arkla will assist with layouts and load calculations.")
- Fifth, "a year-round gas rate for a customer using LPG for air conditioning is a necessity."





## **TOUGH BUYERS** demand Reznor unit heaters ... **In 70 years, only $\frac{1}{10}$ of 1% factory replacement!**

If you want to avoid extra servicing and call-backs, you've *got* to be a tough buyer! You've got to pick a heater that not only works right when you buy it, but will keep on working right. That's why so many plumbing, heating and air-conditioning contractors demand Reznor. There may be less expensive heaters on the market, but none with Reznor's long-term performance record: only  $\frac{1}{10}$  of 1% factory replacement in 70 years!

**EVERY UNIT FLAME-TESTED . . .** You can be sure that your Reznor heaters will arrive in top running order. We

flame-test each unit before shipment. Saves you the bother and expense of uncrating and bench-testing, too.

**LONG-TERM FUEL SAVINGS . . .** Here's where your customers benefit from your "tough buying." Reznor's sensitive, low-voltage thermostat and controls, and two-speed fan with automatic speed selector, keep heat even, without blasts. A Reznor uses less fuel to maintain comfortable heat.

For the full story, phone your Reznor distributor, or write Dept. 4A, Reznor Manufacturing Company, Mercer, Pennsylvania.

*The heating world is full of tough buyers; that's why Reznor is the world's largest selling direct-fired heater!*

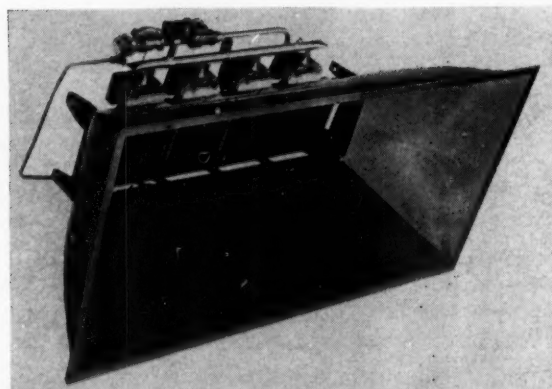
# **REZNOR HEATERS**

"THE TOUGH BUYERS' LINE"

# TAKE OFF

# THOSE BLINDERS!

# INVESTIGATE ►



**Commercial & Industrial  
Heating & Air Conditioning**

**I**NDUSTRIAL and commercial heating and air conditioning are products of today's enlightened management.

Not so many years ago, for example, industrial workers toiled in huge, drafty, barn-like quarters without heat. Bundled in heavy clothing from chin to toe-tip, they suffered through agonizingly bitter weather for three months of the year and sweltered for another three. Workers may have moved faster in cold weather in order to keep warm, but their efficiency was impaired, as was their morale. And, the effects upon their health were certainly detrimental.

Heating the total space in a large, high-ceiling industrial workroom is very expensive. Concrete floors and cold machinery rob the air of heat. Heat rises, stratifying badly, and the upper air becomes warm while the working area remains uncomfortably cold.

Today's gas heating equipment overcomes this disadvantage by spotting heat where it is needed. The trend is away from huge central heating systems and toward heating just the working area and/or the person.

The industrial heating method with widest acceptance is the unit heater, a self-contained device with burners, fans, and all controls in a single package. Adjustable louvers direct warm air to specific work areas. This can be a total area, if

it is sufficiently compact to be heated economically; or it can be simply individual work stations.

Unit heaters are one of the most flexible types of heating equipment on the market today. They can be suspended or set on the floor. Usually, if appearance is secondary to floor space considerations, the suspended position is preferred. They come in a wide range of heat inputs; one manufacturer's line running from 25,000 to 250,000 Btu. They also permit concentration of heat in problem spaces, such as at shipping platform doors.

This flexibility is the unit heater's greatest selling point. While central heating is generally considered the ultimate in heating comfort, it's difficult to design a system that will keep up with the structural changes that are an inevitable part of growth and expansion of a business. Interior remodeling is often a part of the enlargement of a company and even one new wall can upset the old heating pattern.

To illustrate the unit heater's flexibility, in one given area, one or two units might suffice. In another, no larger but with special heating problems, three or four might be more suitable. Unit heaters can be located to give perimeter heating by placing them so they circulate warm air around the exposed walls, the heat chasing itself around the outer perimeter of the

room. A single heater can be set up at a corner opposite the point of greatest heat loss (a door, for example) with the heat directed toward that point for greatest efficiency. Several units can be located in the center of the space to be heated with the greatest concentration of heat directed toward outside walls. Where several heaters are used in a single room containing large doors that must be frequently opened, an unbalanced arrangement is advised, permitting the units to blow warm air across the doorway.

Choice of louver patterns and high velocity nozzles gives additional flexibility. High-velocity nozzles direct heat downward from unusually high locations. Louvers can be set to direct air at a desired angle, vertically or horizontally.

Unit heater installations can and should be engineered with the precision used for the finest central heating systems. Heat loss should be computed. Correction factors must be applied to ordinary heat loss calculations, so the heater will suit the particular space. These factors are available from manufacturers.

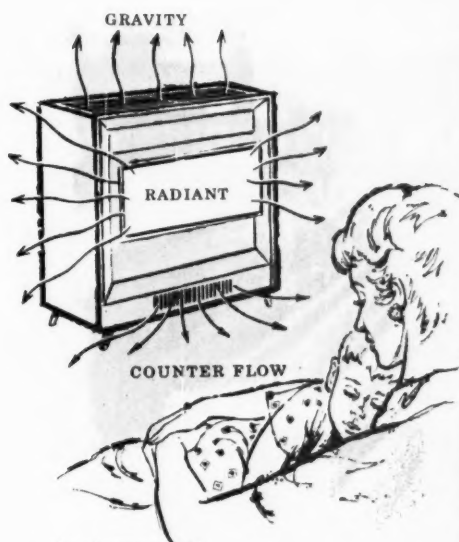
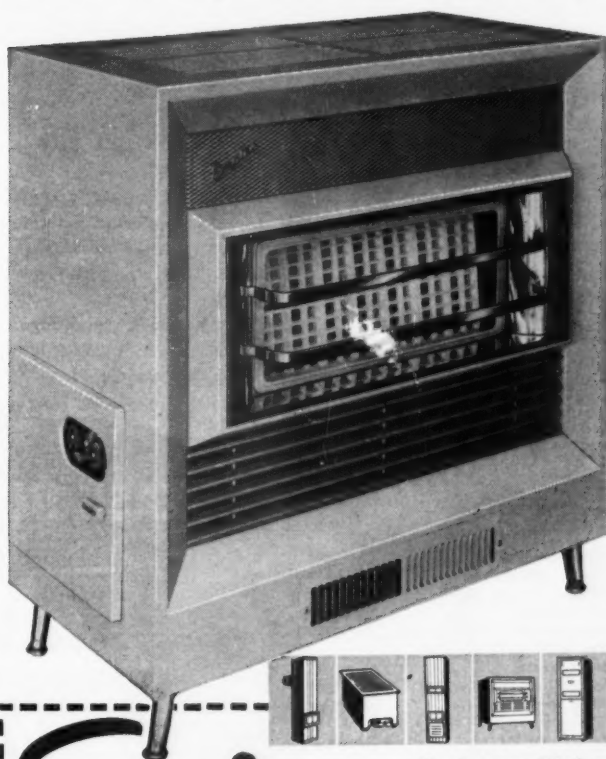
Reznor Manufacturing Co., a leader in the field, offers a suggested list of 28 possible markets. These include: airplane hangars, auditoriums, banks, barber shops, bowling alleys, brooder houses, churches, drug stores, factories,

no burner will ignite or extinguish as quiet as...

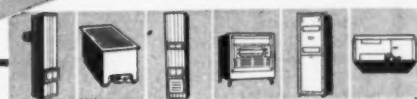
# EMPIRE **RADIANT** IMPERIAL

The new Empire RADIANT Imperial Room Heater *now* has more sales-appeal outside and more superior features inside...

- Automatic temperature control • Special no-noise burner
- Lint Free Burner • Powerful 4-speed blower... and many other features that guarantee MORE Sales and MORE Profit.



*the cheeriness of  
an open fire-place...  
the efficiency of a  
MODERN GAS  
HEATER.*



Manufacturers of the finest  
complete line of Certified  
Gas heating appliances

## Empire

**MAIL THIS COUPON TODAY!**

EMPIRE STOVE COMPANY • BELLEVILLE, ILLINOIS

Quick! Send more details on the RADIANT Imperial.

NAME \_\_\_\_\_

DEALER NAME \_\_\_\_\_

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CITY \_\_\_\_\_

ZONE \_\_\_\_\_

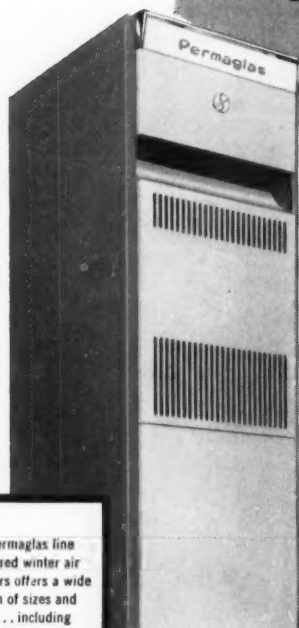
STATE \_\_\_\_\_



# Announcing

another  
important  
**A.O. Smith**  
**FIRST!**

... modulated  
heating with  
**LP!**



The Permaglas line of gas-fired winter air conditioners offers a wide selection of sizes and styles... including Hi-Boy, Lo-Boy and Down-Flow models. Capacities range from 70,000 to 175,000 BTU input. MAGIC-HEET is optional on all models.

Hot off the drawing board at A. O. Smith... straight out of their busy testing laboratory... comes news of vital interest to every LP-Gas dealer in the heating business!

MAGIC-HEET, an amazing device which actually "tunes" the gas flame, is now available on Permaglas warm air units equipped for LP. This makes Permaglas the first and only furnace line offering modulation for LP use. Unlike ordinary "on-off" heating, MAGIC-HEET provides unmatched comfort because it's always on duty... delivering exactly the right amount of heat to keep indoor temperature constant!

More important, this new A. O. Smith development is your key to more sales, more profit on every sale. Write today for full information.

**CASH IN ON EXCLUSIVE**

*Magic Heet*

...available only with

**Permaglas®**

**GAS-FIRED WINTER AIR  
CONDITIONERS**

**A. O. SMITH CORPORATION**  
Permaglas Division, Dept. GPN-560  
Kankakee, Illinois

Gentlemen: Please send full information on Permaglas gas-fired winter air conditioners with exclusive MAGIC-HEET.

Name.....

Company.....

Address.....

City.....Zone.....State.....

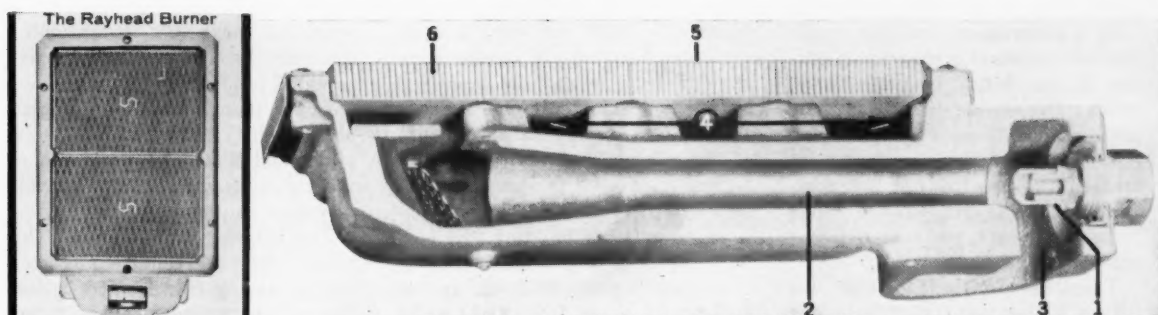
Through research  ...a better way

**A.O. Smith**  
CORPORATION

**PERMAGLAS DIVISION**  
KANKAKEE, ILLINOIS • NEWARK, CALIFORNIA  
A. O. Smith International S.A., Milwaukee 1, Wis.

makers of famous **Permaglas®** glass-lined water heaters... **Burkay®** commercial water heaters





The Schwank infra red burner is shown (l.) as it appears in a burner unit and (r.) in cross section. Gas is metered through an orifice (1) located at the opening of the mixer tube or venturi (2). All air required for combustion enters through the chamber (3). The gas and air are mixed in the venturi, distributed in the

chamber (4), and burned at the outside surface of the ceramic mat (5). A separate minute flame burns at each one of the mat's holes (6). The mat surface reaches a temperature of approximately 1600 deg. F. and after a few moments, the flame is practically invisible.

garages, greenhouses, groceries, gymnasiums, laboratories, libraries, offices, public buildings, recreation centers, restaurants, schools, service stations, shopping centers, showrooms, specialty shops, storage buildings, taverns, theatres, and warehouses.

That list could be subdivided almost infinitely to represent hundreds of markets. It should bring to mind several unit heater prospects in your area.

A second, relatively new, but very important method of heating industrial and commercial establishments is with infra-red burners. Particularly good for spot heating outdoors or in large, barn-like buildings, they warm objects, not air.

The radiant heater has a flat ceramic mat, which is perforated with tiny holes, 200 to the square inch. The mixture passes through the holes to the outside surface of the mat, where it burns in minute separate flames. The entire surface reaches a temperature of approximately 1600 deg F. It is, in effect, a generator, giving off infra-red energy rays. When they strike a person or an object, the rays are transformed into heat. The air remains cool while objects become warm. The net result is a sharp reduction in fuel costs with a high degree of comfort. Like unit heaters, infra red heaters are highly flexible. The range of inputs runs from 24,000 to 144,000 Btu per hour. They can be placed at almost any height, and the spread of heat can be varied from narrow to wide by the selection of reflectors. They

can also be mounted at an angle or horizontally.

Infra red heaters extend the season for activities heretofore confined to the warm months. They have already been used to good advantage at drive-in and outdoor restaurants and at race tracks.

They can even make wintertime swimming enjoyable in northern climates! Case histories proving their advantages are already numerous.

In Los Angeles, the Board of Education found it could do away with indoor cafeterias and still provide comfortable eating conditions by recessing infra-red heaters into the roof deck of outdoor dining areas. Eleven schools are now so equipped, or being equipped.

At Rohr Aircraft, in Chula Vista, Calif., two areas measuring 200 x 240-ft each, having a combined heat loss of more than five million Btu are comfortably heated with infra-red units with an aggregate installed input of only 3,072,000 Btu. According to Tom Haldeman (Harry F. Haldeman, Inc., who furnished these two case histories, standard practice would have specified 6,280,000-Btu input with forced air units.

Hundreds of other commercial and industrial histories are available to anyone who cares to ferret them out. It's a certainty that infra-red heating, since its introduction, has opened up whole new heating vistas for gas equipment dealers everywhere.

The ultimate in comfort is air conditioning, and it's only a step—though a long one—from comfort

heating. Air conditioning is still a rather rare bird in commercial and industrial buildings. It's surprising, in light of the small percentage of buildings enjoying the benefits of air conditioning, to learn that the science is a half-century old. It's overdue for a boom.

Today, hardly one-third of all construction and remodeling of commercial and industrial buildings includes any form of cooling. Less than 10 per cent of all existing buildings have cooling facilities. Yet, in certain areas—parts of the South and the Southwest—the economy is practically built upon it.

There are plenty of good reasons why business should adopt air conditioning as a standard structural item. Business is made up of people, and people simply do not work at top efficiency if the indoor climate is not right. Tests have proved this. Physiologists have found that working in high temperatures produces more stress than working in a cool environment. Fatigue appears sooner. The work is performed slowly and with more effort and more mistakes. And, on the hottest days, morale plummets.

How much does this affect productivity? The answer has been delivered mathematically, based upon a number of tests. John E. Haines of Minneapolis Honeywell has quoted tests at the Detroit Edison Co., where, without air conditioning, 8988 work units required 5008 man-hours. With air conditioning, 10,474 work units required only 3872 man-hours. The increase in efficiency was 51 per cent!

In a government test, air conditioning increased stenographic output 24 per cent. In other tests, white collar workers improved their performance 35 per cent and nylon hosiery production workers increased their output 29 per cent. Absenteeism, it was found, dropped 25 to 30 per cent, and turnover was cut sharply.

These days, when labor costs are taking larger and larger bites out of the operating budget, anything that will make these dollars more productive is likely to be welcome.

The problem, of course, is to prove that the investment can be amortized in fairly short order. Here again, we call on Haines, who worked up some figures on costs based upon the American Society of Heating and Air Conditioning Guide:

"In a typical new industrial building, the cost of owning and operating the building, including heating, is \$1.92 per sq ft per year. Machinery and equipment, including depreciation, obsolescence, maintenance, and taxes, amounts to \$7.05 per sq ft per year. Wages and fringe benefits cost \$36.10. The additional cost of owning and oper-

ating (10 hours per day) a complete year-around air conditioning system would be only 46 cents per sq ft per year or only one per cent of the total cost. This means that if the efficiency of the workers is increased only 1.3 per cent, the system will pay for itself."

In an existing building, the per-sq-ft cost of air conditioning is only slightly more, 55 cents. Initial cost would be up from \$3.13 to \$4 per ft. But the investment is a sound one because the efficiency need increase only 1.5 per cent to make it pay.

These figures, plus comparable ones for commercial buildings are shown in the accompanying table.

Since air conditioning has a direct dollar benefit to industry and commerce, it has certain selling advantages that home air conditioning lacks. But, being a matter of economics, it takes greater per-job sales effort. Complete presentations, with careful plans, heat gain calculations and documented evidence of the effect upon worker efficiency, are a must.

Competition will offer plenty of problems. Electrically-operated systems enjoy wide popularity. How-

ever, in large air conditioning equipment, gas is much better represented and more strongly entrenched than it is in the domestic field. Carrier, York, Trane, Caterpillar, and Waukesha are a few of the big names in gas-fired air conditioning equipment.

And it's worth the trouble! One or two big air conditioning jobs can go a long way toward balancing out the summer-winter ratios. The First National Bank of Oklahoma City uses 21,400 Mcf of natural gas for the heating season, but 37,600 Mcf for cooling. Many other installations enjoy the same inverse ratio.

Here's what a commercial air condition customer means in terms of gas consumption:

Absorption-type gas air conditioning uses 12,000 Btu per hour per ton of cooling capacity. The frequently-used 25-ton unit is capable of handling 5000 to 12,000 sq ft. A 100 x 100 ft restaurant would require two such units, using LPG at the rate of 600,000 Btu per hour!

A few of these load-balancers would level out that ratio, wouldn't they? Investigate!

## HOW AIR CONDITIONING PAYS FOR ITSELF

(all costs on square foot per year basis)

Type of Building	Cost of owning and operating building (includes heating)	Wages	Other costs (includes equipment, machinery, supplies, etc.)	Total costs	Cost of owning and operating year-around air conditioning	Total year-around costs in air conditioned building	Worker efficiency (or rent) increase needed to make air conditioning pay for itself
New Industrial	\$1.92	\$36.10	\$7.05	\$45.07	\$0.46	\$45.53	1.3%
Existing Industrial	1.33	36.10	7.05	44.48	.55	45.03	1.5
New Office	2.91	66.00	2.00	70.91	.56	71.47	0.9
Existing Office	2.07	66.00	2.00	70.07	.68	70.75	1.0
Tenant-occupied Existing Office	3.29 <sup>a</sup>	66.00	2.00	71.29	.93 <sup>a</sup>	72.22	1.4
New School	(b)	6.50	(b)	9.29	.26	9.55	4.0
New Hospital	5.56	26.94	19.80	52.30	.76	53.06	2.8
Existing Hospital	4.76	26.94	19.80	51.50	.83	52.33	3.1
New Store	2.25	10.00	4.00	16.25	.41	16.66	4.1
Existing Store	1.74	10.00	4.00	15.74	.45	16.19	4.5
New Hotel or Motel	3.47	3.42	1.90	8.79	.85	9.64	9.7 <sup>c</sup>
Existing Hotel or Motel	2.77	3.42	1.90	8.09	.95	9.04	11.7 <sup>c</sup>
New Apartment	(b)	(b)	(b)	2.32	.79	3.11	34.2 <sup>c</sup>
Existing Apartment	(b)	(b)	(b)	1.69	.90	2.59	46.8 <sup>c</sup>

Compare these figures with the 30% average worker efficiency increase air-conditioning brings

(a) Includes 20% profit. (b) Figures not available. (c) Rent would have to be raised this much to maintain 20% profit.

**That First Look Starts The Sale On Its Way!** *That first look* your customer gives a beautifully designed WARM MORNING Gas Heater puts her (or him) in a buying mood. When you explain and show the exceptional WARM MORNING comfort and convenience features and quote the bargain-low prices, chances are your sale is made. Prove it to yourself. Put WARM MORNING Gas Heaters on your sales floor and see how they sell! Right now your WARM MORNING Distributor offers attractive early booking discounts, with anticipation or a pay-much-later Fall Dating plan. The line is complete and the advertising and promotional support for WARM MORNING dealers is the strongest ever. Why wait? Write for literature and prices today.

A black and white illustration featuring a rectangular gas heater on the left and a woman on the right. The heater has a dark, possibly wood-grain or metal, exterior with a lighter-colored interior showing a series of vertical bars or a grate. The woman is depicted in a mid-century style, wearing a light-colored jacket over a dark dress and a striped scarf. She is looking towards the heater with a pleasant expression. The background is dark with several stylized starburst or spark-like patterns scattered around. At the bottom of the illustration, the brand name 'Warm Morning' is written in a large, bold, italicized script, with 'GAS HEATERS' in a smaller, all-caps sans-serif font below it.

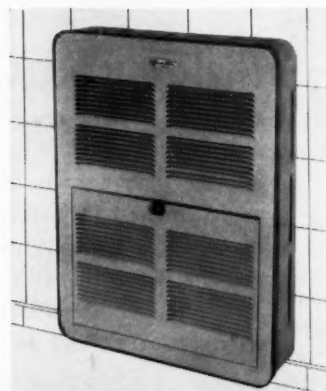
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GAS HEATERS

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## TAKE OFF

## THOSE BLINDERS!

# INVESTIGATE ►



**Motel Heating & Air Conditioning**

**O**VER 60,000 motels! One-and-four-tenths-million rooms! Gross annual earnings approaching \$2½ billion! A total investment in excess of \$8 billion! If you have any doubts about motels being big business, dispel them!

The motel business has indeed come a long way since the pre-war days of 13,000 dinky and dingy cabins and tourist camps. And, growing at a net rate of 1500 to 2500 motels per year, the business will go a long way in the future. You can go right along with it, if you get in there and pitch.

BPN has been able to put together a comprehensive picture of the motel business, thanks to fine cooperation from two publications serving that business, *American Motel Magazine* and *Tourist Court Journal*. Some of the facts will surely surprise you. Others may amaze you. Most should encourage you to tap this big market.

At present, there are 60,500 motels, as compared to 58,000 two years ago and 53,000 five years ago. More than one-third of the total, or 36.5 per cent, are outside the city limits. Of the remainder, 48.1 per cent are inside city limits, but definitely on the outskirts, while 15.4 per cent are downtown.

Estimates are that 2000 to 3000 motels will be built this year. The net gain should be 1500 to 2500, since some go out of business each year. At present, your market is not growing as quickly as the rest,

since only 25 per cent of the new motels will be built outside the city limits. The current trend is definitely toward downtown, where 33 per cent of the new units will go. That leaves 42 per cent for the outskirts.

How are these motels distributed geographically? In a 1958 motel census, they varied all the way from less than 75 for Rhode Island to over 8400 for California. Florida and Michigan had over 5000 apiece and Colorado, New York, Oregon, and Texas each has around 2500. In the 1000 to 2000 category were: Illinois, Maine, Massachusetts, Missouri, Ohio, Tennessee, Virginia, Washington, and Wisconsin.

The average number of rental units per motel has grown somewhat in recent years, but not as much as one might expect. The current average is about 22 or 23 units, depending on which survey you cite. As far back as 1948, one survey indicated an average of 20 units. However, six years later, this same survey's average had dropped to a more realistic 16.2 and since has steadily shown increases to the present level.

Geographically, here is what a survey found the average units per motel to be: New England, 19.8; Middle Atlantic, 18.1; South Atlantic, 26.3; East North Central, 16.4; East South Central, 29.5; West North Central 21.2; West South Central, 25.5; Mountain, 22.9; and Pacific 26.9. This added

up to a national average of 23.3.

The total number of rental units increased from 600,000 in 1948 to 954,000 five years ago and 1,251,000 two years ago. The estimated total today is 1,390,000.

The amazing fact is that on the average night, three-quarters of these units are occupied! This is all the more amazing when one considers that despite the supposedly highly seasonal aspects of the business—approximately nine out of ten motels are open the year around.

The reason for this high occupancy rate is, of course, the drastic postwar change in travel habits. Surveys taken at tourist attractions indicate that as high as 90 per cent of the vacationers stay in motels. Even more important from the standpoint of a stable business is the way nation's businessmen have taken to the motel. It is commonplace today for a man to fly across the country, rent a car, then make a motel his office away from the office.

To keep up with this business, 21.5 per cent of the nation's motel owners expect to add an average of 8.8 units during the next 12 months, according to a recent survey. The same survey found that during the same period 3.9 per cent of the owners expect to build a new motel, and the average size will be a whopping 55.6 units!

Speaking of owners brings up a real point in your favor—most of



these motels are owned by individuals. In fact, individuals or families own 71.1 per cent of the total. More than half of the remainder, or 15.9 per cent, are owned by a partnership. Only 12.4 per cent are corporation-owned and chains have just a minute 0.6 per cent.

Furthermore, the owners are the managers in 82.5 per cent of the cases. And here's another big point in your favor: the manager can use your expert advice because the chances are three to one that he has been in the motel business less than five years. Fifteen per cent, as a matter of fact, have been in the business less than one year.

Let's take a closer look at that business. This is no fly-by-night operation, for the average investment is \$168,000 and the average investment in a new motel is expected to be \$287,000. In existing motels, the facility is valued at \$103,000, the land at \$37,000 and the furnishings at \$27,000. In new motels, the big investment increase is in the facility, up to \$225,000.

Let's take a look at the motel building, itself. It is heated, of course, and 25.5 per cent of the motels now use LPG for heating. However, only 16 per cent of those now in the planning stage expect to use LPG. This is not as bad as it sounds. The reason for this is that some motels now use more than one fuel, meaning that the percentages of existing fuel usages now total over 100 per cent. However, now motels are obviously planned to use only one fuel, so the individual fuel percentages drop, as shown in the accompanying chart. It can be expected that a municipal gas supply would heat 35 to 40 per cent of the motels. But, the really surprising thing is the inroads oil and electricity have made and the way oil will hang onto its share in new construction. It should be comforting to note, however, that the kilowatters will suffer the greatest loss in the future, more than half their market going down the drain.

An interesting side in the heating aspect is that 7.7 per cent of the motels have gas bathroom heaters. The average number is 16.1 heaters. In addition, three per cent of the owners expect to put in an average of one dozen gas bath-

room heaters in existing units, and 50 per cent plan to install an average of four in additional units to be built. The kilowatters are ahead here, however, with 30.4 per cent of the motels reporting an average of 13.6 electric bathroom heaters. Only 25 per cent, however, expect to put in electric models in their new additions.

Air conditioning has almost become a must for the motel, with 63.5 per cent of existing motels having it. However, it is almost always of the room unit variety, the average air conditioned motel having 24. Sixty per cent of the owners planning to add rooms will also add air conditioners, at an average of 16.2 per motel. The future looks great for air conditioning with 76.1 per cent of all future motels expected to have it—and the average is a whopping 67 units per motel!

So you know exactly what kind of building we're talking about, let's take a look at the average motel of today and tomorrow. First of all, the chances are good that it's a well designed building, for four out of ten existing motels and seven out of ten future motels are architect-designed. There is a definite trend to two-story motels. While only 13 per cent now have a second floor, 50 per cent of tomorrow's motels will have one. The chances are currently two to one that it will be a masonry building, and they'll go up to three to one. This means ducts and piping can be a problem if not put in originally. In the new motels, brick will take a big lead, 52 per cent as opposed to 20.5 per cent now. Frame construction, meanwhile, will drop from 37.5 per cent in existing buildings to only 22 per cent in future ones. Brick veneer and stone will each maintain their eight- and six-per cent cuts, but concrete block will drop from 26 per cent to 12 per cent.

Insulation is now a virtual must, with 80 per cent of existing motels having it. This figure jumps to 93 per cent for the units now on the drawing boards. Weatherstripping would also seem to be called for, since the average motel now has 69 windows and 62 doors and these figures will jump to 150 and 140, respectively.

What are the requirements for

**ASCOT**

**the boiler  
that mounts on the wall  
... out of the way**



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### **ASCOT GAS BOILER PUTS PROFIT BACK in HOT WATER HEATING**

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**TRY THIS  
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This simple experiment shows how HYDROTHERM horizontal, cast-iron boiler sections trap more heat — deliver greater value per LP gas dollar. Hot gases ascend along a tortuous, zig-zag path between successive, staggered rows of deep-ribbed boiler tubes — just as cigarette smoke (and heat) travel upward through the staggered fingers of your hands.

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HYDROTHERM offers the most complete line of residential, gas-fired, hydronic boilers available. There are 11 sizes from 50,000 to 300,000 BTU/hr. input, for accurate load matching and maximum performance. They are factory assembled, complete with burner and the finest gas controls, for rapid, trouble-free installation.



DEPT. 13BP

NORTHVALE, NEW JERSEY



a good heating and air conditioning system?

"The answer depends entirely on what fuel is available," says Bob Gresham, editor-publisher of *Tourist Court Journal*. "Where natural gas is available, every effort will be made by a practical motel owner to use it. When you get into hydroelectric-produced fuel, it then becomes obvious that gas could very easily be winked out of the picture because of the rate structure. Where neither is available, we get into fuel oil or LPG. By the same token, it is necessary to evaluate systems on the basis of economical installations."

through filters and screens, it can get pretty stuffy. We strictly feel that it should be individual room air conditioners where each guest can control his own climate by opening windows or turning on air conditioning or heat."

"We use a chilled water system. We have a convector in every room and it runs either hot or cold water, depending on whether you want heat or air conditioning. There is an individual thermostat in every room because we like to give the man the weather he wants. However, we can't give air conditioning in one room and heat in the next be-

## MOTEL LOCATIONS

	Existing Motels	Planned Motels
<b>DOWNTOWN</b>	<b>15.4%</b>	<b>33%</b>
<b>OUTSKIRTS (but inside city limits)</b>	<b>48.1%</b>	<b>42%</b>
<b>OUTSIDE CITY LIMITS</b>	<b>36.5%</b>	<b>25%</b>

What are the heating and air conditioning trends?

"With the trend toward two-story construction," Gresham continues, "central units are going to be given more consideration. On the most part, the warm air and cold air approach has not been very satisfactory. Noises are frequently carried from one room to another through the duct system. But, of course, there are adaptations of central air units which are practical. Most of the newer motels are setting up hot and cold water systems with a convector or console type unit. Here again, fuel enters the picture."

In its April, 1960, issue, *American Motel Magazine* published a forum of motel owners' opinions. The question, "What kind of air conditioning do you recommend?" brought these replies:

"After several experiments, we are using individual room units because we are very reluctant to use any kind of system which will circulate air from one room to another. Even though it goes

cause we are either pumping hot water or cold water. This problem occurs twice during the year — when we are in the change-over period—but I don't think it is really serious."

"We have recently come up with a three-pipe system with which we can now give air conditioning in one room and heat in the next through the same system. This is going to be one of the best things that ever developed in the business. It gives you the advantages of the central system: you get away from the noise of individual air conditioners and the individual can really have the weather he wants in his room. As compared to a regular circulating two-pipe system, the three-pipe system costs only about \$60 more per room."

Exactly what type of air conditioning equipment are you apt to find in a motel? The most recent detailed survey available dates back to 1957, but the facts are good clues to the equipment now in use.

Window units were the most

popular type with 64.2 per cent of the motels having an average of 14.9 units. Nearly all these units were one-ton or less, with the  $\frac{3}{4}$ -ton models accounting for 39 per cent, the  $\frac{1}{2}$ -ton models for 37 per cent, the one-ton models for 15 per cent, and the  $\frac{1}{3}$ -ton models for eight per cent. The majority of these units are ripe for replacement, 54 per cent now being over six years old. An additional 35 per cent are now four to six years old!

Wall units were the second most popular type. Many of these were, in fact, window units mounted in the wall. Over 25 per cent of the motels had wall units, the average number being 17. Percentage-wise, the size of the units closely paralleled that of the window units, except that  $\frac{3}{4}$ -ton models had a more substantial total, 48 per cent, and the other sizes each accounted for a couple percentage points less. The wall units were somewhat newer than the window type, only 30 per cent now being over six years old. However, 64 per cent are now from four to six years old.

cent of the motels. Average usage was 24 units per motel and 82 per cent of these had been installed in the previous three years. The console floor unit was used by 4.6 per cent of the motels. Forty-five per cent of these were less than three years old, and each motel used an average of 6.9 units.

The remaining category in the survey was central air conditioning, reported by 7.9 per cent. And here is a most interesting fact: 50 per cent of these units are now over ten years old and another 25 per cent are over six years old.

It's little wonder, then, that Gresham answered with a resounding "Yes!" when asked if motel air conditioning needs upgrading.

And where will this air conditioning and heating equipment be purchased? It could be from you, Mr. LPG Dealer! At the risk of completely inundating you in statistics, we'll offer a few final percentages from yet another survey. *American Motel Magazine* found that 52.7 to 69.8 per cent of the motels bought their air conditioning equipment from the local dealer

## MOTEL FUEL USAGE

	Existing Motels	Planned Motels
<b>MUNICIPAL GAS</b>	<b>41.5%</b>	<b>35%</b>
<b>BUTANE, PROPANE</b>	<b>25.5%</b>	<b>16%</b>
<b>OIL</b>	<b>27.5%</b>	<b>24%</b>
<b>ELECTRICITY</b>	<b>24.5%</b>	<b>12%</b>

Package units were just beginning to come into their own in 1957, and were reported by 11.9 per cent of the motels, which had an average of 1.6 units. Nearly 57 per cent of these units were under three years old at the time. Size-wise, they ranged all over the lot from 2 to 24 tons. The bulk, however, were 3- 5- and  $7\frac{1}{3}$ -ton units, with the 5-ton size (41 percent) having a distinct lead over the  $7\frac{1}{2}$ -ton size (28 per cent).

Also coming into their own at the time were two other types. The built-in closet-type chilled and hot water unit was reported by 5.2 per

cent distributor and 61.3 to 70.0 per cent bought their heating equipment from the same source. Thus, if you get far enough into heating to become the local dealer or distributor, you can fairly well sew up this market. On the other hand, if you fit into the local retail outlet category, you can still get up to 11 per cent of these sales without changing motel owners' current buying habits.

There you have the motel market picture—straight from the motel's owner's mouth. It's a big picture and one that could mean big profits to you. Investigate!

EVERYONE'S A CUSTOMER  
FOR A DEARBORN



### "Anybody Home?"

As a matter of fact, *everyone's* at home (and ready to buy) when you're selling Dearborn, the world's finest *area* heating products. So don't be spooked by others' claims. Dearborn has the beauty, the engineering and the lasting quality that means solid profit year after year. *Now* is the time to see your Dearborn salesman... for a great '60 heater season!

### COOL SAFETY CABINET

The most amazing feature of America's foremost heating line. The top, sides and back of every Dearborn is cool to the touch. Put the heat in the living area... where it's wanted!



The Dearborn Crest is the world's finest unvented gas area heater, a standard of quality for the heating industry.

## Dearborn

Get details of Dearborn's clean-cut selling policy from any of these regional sales offices: Atlanta, Chicago, Dallas, Los Angeles, San Francisco.



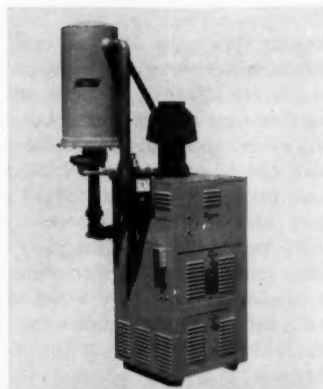
1960 Dearborn Store Co., Dallas



## TAKE OFF

## THOSE BLINDERS!

# INVESTIGATE ▶



Pool Heaters

**W**HAT'S that you say? You've been thinking about domestic air conditioning and know you should be doing more in commercial-industrial and motel markets, but you're not going to waste your time chasing around the countryside looking for a swimming pool to heat?

Well, Mr. LPG Dealer, you'd better keep your eyes open when you go around servicing all those new air conditioning, commercial-industrial and motel accounts . . . or you just might end up in a swimming pool! If the various laws of averages mean anything, five of your customers now own swimming pools! That means five customers whose load might easily be doubled—or even tripled! And this is only the beginning!

If this sounds interesting, but you're still dubious, let's look at just three facts.

- Fact Number One is that the status of the swimming pool has changed tremendously in recent years. Twenty years ago, the private pool was a sky-is-the-limit day-dream for all. Ten years ago, pools were beginning to catch on as the postwar let's-live-it-up-mood went into full swing. Still, however, pools were relatively expensive, rather uncommon, and reserved for high income families. Today, the pool—along with the boat—is replacing the new car and the new home as family sta-

tus symbols, things that enable one to "keep up with the Joneses."

- Fact Number Two is that the number of pools has grown so fast that the word "explosion" is more appropriate than "boom." Twenty years ago, there were just 200 private pools in this country. Fifteen years ago, there were 8,000; ten years ago, 18,000; and five years ago, 45,000. Then, in the late fifties, came the explosion. Today, we have a quarter-million pools and new ones are going in at the rate of 70,000 a year. That's a new pool every 44 seconds, night and day, every single day of the year! Economists have dubbed our new decade the Golden Sixties, but it may be remembered as the Splashy Sixties, for the nation is expected to have more than one million pools by the end of 1969!
- Fact Number Three is that pools are not only bigger in number, but better in quality. Filters were once a rarity; but now no one would think of doing without one. The same thing is happening with heaters. In the cooler climates about 80 per cent of all pools have heaters and most of the remainder have provisions for adding one at a later date.

Who is a pool heater prospect? Everyone who has a pool but doesn't have a heater, plus everyone who is considering a pool.

Geographic location means nothing for heaters are used in every

state. The ideal swimming temperature is 80 degrees, but unheated pools in most of the country never get that warm. In the Southeast and Mid-south, pools will usually warm up to 80 by the beginning of July and cool down below that figure by the end of August—exactly two months of ideal swimming—and that's the best average for any of the nation's major geographic areas. The Southwest is the only other area in which an unheated pool will go above 80 and that's only in August.

The minimum comfortable swimming temperature is 70 deg. In the Southeast and Mid-south, unheated pools reach that temperature in early May and hold it until October, a five-and-a-half month swimming season. In the Southwest, the season is four and a half months, starting one month later and ending at the same time.

In the Northeast and Midwest, the swimming season is just over two months, beginning at the end of June and ending in early September. In the Northwest, unheated pool temperatures never get above 65, meaning that swimming is never comfortable there, unless the pool is heated!

A heater is usually considered to extend the swimming season as long as water in nearby unheated pools stays above 50, since it is not very economic to raise the temperature more than 20 deg. In the



READY SIZING CHART

EQUIVALENT WIDTH & LENGTH	TEMP. RISE FROM NATURAL POOL TEMP.* TO DESIRED SWIMMING TEMP.							LEGEND
	10°	15°	20°	25°	30°	35°	40°	
9 x 24								80-WHG
12 x 28								120-WHG
15 x 30								160-WHG
15 x 35								225-WHG
17 x 35								310-WHG
18 x 36								400-WHG
18 x 40								600-WHG
20 x 40								800-WHG
20 x 44								
20 x 50								
24 x 50								
30 x 60								

\* Check with your water utility the reservoir (not ground) water temperature during coldest swimming month.

For sizes and temperature rises other than above, use sizing formula.

For extreme conditions, wind, low humidity and extra

low ground temperature use next size larger unit.

For commercial pools, use formula for sizing and then consult manifolding technique paragraph 27.

Instant pool heater sizing is possible with this chart, once you've determined the average reservoir temperature for the coldest month during which the customer wants to swim. Subtract this figure from either the minimum (70 deg.) or ideal (80 deg.) swimming temperatures (whichever he desires) and locate the

proper column for this desired temperature rise. The legend at right reads in Raypak model numbers but is easily translated into Btu by adding three zeros. Thus, Model 80-WHG means an 80,000 Btu heater may be adequate for pools from 9 x 24 to 18 x 36, depending upon requirements.

Southwest, unheated pools never drop below 50, so the season can be extended from four and a half to 12 months! In the Northwest, a heater makes the difference between no season and a six and a half month one, running roughly from mid-April to November 1. In the Southeast and Mid-south, a heater can extend the season to ten months, beginning in mid-February and ending in mid-December. In the Northeast and Midwest, a heater triples the season, making it six months long, from May 1 to November 1.

Thus, no matter where a pool owner lives, he is a prime prospect for a heater. And a home owner's financial bracket is just about as inconsequential, once he's decided he'd like a pool.

A New England pool builder recently ran a spot check on his last 50 customers. He found only nine to be high-paid executives or professional men. The rest were salaried workers earning \$6000 to \$8000 a year!

Two developments are almost completely responsible for this sudden ability of the average man to own a pool. First, mass production techniques—including sprayed concrete and plastic pools, and plastic liners—have lowered the price to

that of a low-priced car. Second, lending agencies—which a few years ago would have scoffed at the thought of a pool loan—now eagerly solicit such business.

Basically, there have been three different types of heating systems. But, recently Raypak Co. began test-marketing a new type of heater that could well revolutionize the field with unheard of efficiency at a low price. The two most popular systems heat pool water—either directly or indirectly—a dozen or so feet from the pool, utilizing the pool's filter pump to move the water to and from pool. In the third type, radiant heating, pool water is heated while it's in the pool, the heat coming from a grid of hot-water-carrying pipes in the bottom and sides of the pool.

Direct heating is the most popular method in use because it is the cheapest, costing about \$500.

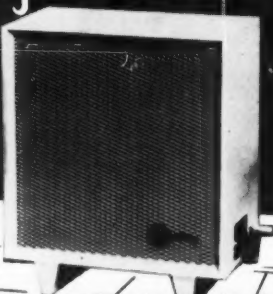
In this type, the burners directly heat the pool water, the way water is heated in a pan on a range. There are two kinds of direct heaters, the water tube, and the fire tube. In the water tube, pool water passes inside tubes which are surrounded by fire. This type can be 83 per cent efficient, but only if the tubes are kept free of scale and incoming water temperatures are closely con-

trolled to prevent condensation. In the fire tube type, the fire is contained in vertical tubes which are surrounded by a storage tank of water. Thermal efficiency of this type, 70 per cent, is reduced by standby losses and is in a continual state of decline, since the accumulating scale cannot be cleaned out. Both kinds of direct heaters require close attention to pool chemistry to keep scaling to a minimum.

Indirect heating costs about 50 percent more than direct heating, or about \$750. The indirect heater may be compared to a double boiler or a range. A sealed supply of water is heated in a central boiler and in turn heats the pool water which is in a copper coil. This coil may be within the boiler or in an external tank connected to the boiler. Due to heat loss through the walls of the coil, this method is about five per cent less efficient than the direct method. However, maintenance is low because the boiler cannot scale or condense and operating temperatures and pool chemistry are not as important as with direct heating. Where the water is especially hard, indirect heaters are the only type practical.

Radiant heating accounts for the smallest portion of the market because of its high original cost,

LOOKING FOR AN  
"Eye-Catcher?"



THIS IS IT! THE ALL-NEW  
**ARMSTRONG**  
Model 208 Vented Heater

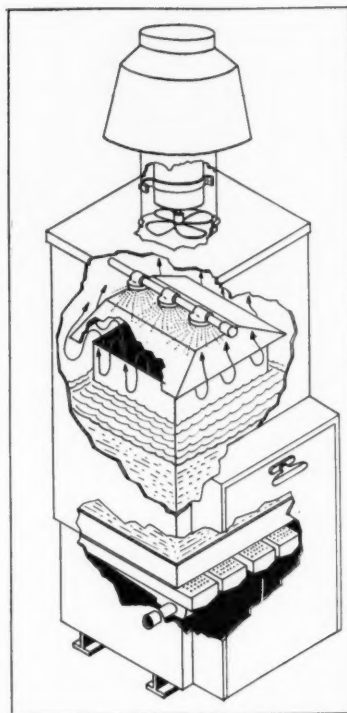
With new beauty that attracts sales in your store. Beauty that satisfies in the home bed room or bath; in the small mobile home, in truck cabs. AGA Approved. This 8,000 btu heater is only 14½" wide by 17¼" high. Optional controls and finest drilled-port, cast burner. Choice of white with silver front or dark "Mochatone" with gold expanded—metal front. Write or wire—get the facts about Armstrong Complete Line from 8M to 70M btu, Vented and Unvented.



**Armstrong Products Corp.**  
Huntington 12, W. Va., Tel. JA 3-0165

about \$1250. However, it has a number of advantages. It heats the water evenly, eliminating hot and cold areas in the pool. Since the sides and the bottom of the pool are heated, heat loss—and fuel costs—are reduced about 25 per cent. Because an indirect boiler is used, there are no scale or condensation problems; no coils to clean. A further economy is that pool temperature can be kept up whether or not the filter pump is operating.

That new type of heater is the "Spray-Ray," presented to the Southern California market in April. Advertised at only \$377 for the 155,000 Btu model, it is claimed to have an amazing 94.7 per cent efficiency, with fuel savings of up to 38 per cent. Its basic principle is simple: a fan pulls the heat of combustion through a fine mist of pool water, as shown in the accompanying diagram. Additional advantages claimed for the new heater include: "impossibility" of scaling, stack temperatures "so low you can hold your hand over the flue," "lowest" cost piping, and savings in chemicals because momentary va-



Amazing efficiency is claimed for the new Raypak "Spray-Ray" heater's simple system. Hot air is pulled up through a central fire-box and around the fire-box hood by a vent fan. Water is sprayed on the hot hood, vaporizes, then condenses in a chamber around the fire-box.

porization of the water kills bacteria and algae, eliminating the need for acid and minimizing chlorine use, both major pool upkeep cost factors.

Once a particular heating method has been selected, the proper size of unit must be determined. Ten variables affect heater size: surface area, gallonage, wind exposure, wind velocity, desired rate of pool water temperature rise, sun exposure, air temperature, relative humidity, and the season. Heat losses from an open pool may be divided into three classes: radiant, evaporative, and convective. Thus, pool heater sizing can be very scientific. On the other hand, the variables can be averaged out and charted to make sizing a quick, easy operation. Whether you want scientifically exact or pragmatically approximate figures, heater manufacturers can supply the needed information.

Accompanying this article, for example, is a chart from a Raypak

# ONLY

## SUBURBAN Nōvent and DYNAVENT GAS HEATERS INSTALL...

**Automatic with Built-in or Wall Thermostat—**  
**Burn no room air**  
**Forced air circulation—Even heat floor to ceiling**

**SAVE UP TO 30% IN FUEL COSTS**

Available in three sizes—20,000 BTU—35,000 BTU—45,000 BTU. Fully approved by AGA, Leading Utilities and LP-Gas Marketers. For complete details, write to DEPT BP-660.

IN WINDOWS



IN WALLS



POWER VENTED—NEED NO FLUE OR CHIMNEY



Suburban

**APPLIANCE CO.**

General Offices: P. O. Box 551, Morristown, N. J.  
Factory Dayton, Tenn.

engineering bulletin. To use, you need know just three things: the pool dimensions, the owner's desired water temperature, and the minimum temperature of the water he will want to heat. To determine the last figure, ask the local water utility for the reservoir water temperature on the first and last days of the owner's planned swimming season. The difference between the two temperatures is located on the chart. Except for the phone call, the whole process will take only seconds.

On the other hand, you may want to be more exact. This would be particularly true where the heater is to operate under unordinary circumstances. Rite Engineering & Manufacturing Corp. has developed charts (see page 59) that enable you to precisely figure radiant, evaporation and convection losses. You will need to obtain figures for the most severe conditions under which the heater will operate: minimum humidity and air temperature, and maximum wind velocity. Getting these figures may take a little time, but the calculations take only

a couple of minutes.

With these basic pool and pool heater facts under your belt, we hope you still have two questions left: "How do I sell gas pool heaters?" "How much of a load are they?"

Your problem is not selling gas pool heaters, but selling pool heaters. Gas is universally recognized as virtually the only fuel for pool heaters. Except for a few areas where the kilowatters are really giving away the stuff, electricity, isn't even in the same league with gas. Raypak president Albert Whittell says, for example, that in the Chicago area, electric pool heating is 418 per cent more expensive than natural gas and 282 per cent more expensive than propane. While oil heat is in the same league cost-wise, it is not in other ways, and is seldom used.

Thus, your real job is to sell the idea of a heated pool to those who either have or want a pool. In addition, it certainly won't hurt to do a little grass roots work, interesting your customers in swimming pools. You can start by contacting any

and all swimming pool contractors in the area. If none are close, contact the nearest one. Work with them to promote pools in general, heated pools in particular. Since the chances are good that they will both sell and install the heater, your profit will come from selling the fuel. If the customer can't be sold on installing a heater when the pool is built, make sure he spends the few extra dollars it takes to have heater piping put in with the pool.

A pool heater can mean 1,000 to 2,000 gal. per customer per year in the case of a private pool, more for a motel, school, or club pool. And the chances are that every last gallon will be off-peak load!

In terms of dollars and cents, here's what it can mean to you. Sunset Magazine, authority on outdoor living, says: "With only occasional use, \$15 to \$20 a month is average; but in colder climates, heat costs of \$40 to \$50 a month are not uncommon."

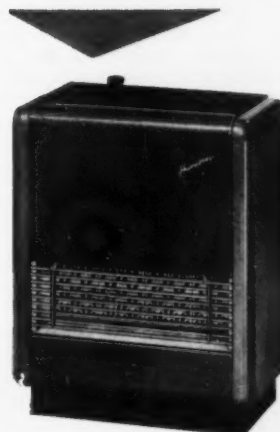
That \$15 to \$50 would look mighty good in your till, wouldn't it? Investigate! ■

*Humphrey*

CIRCULATORS WITH "TOPTROL"  
GIVES MORE COMFORT  
WITH 3-WAY HEATING!



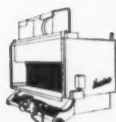
Humphrey presents two new 1960 circulators: the Director and the Radiantfire, both featuring the exclusive "Toptrol"—the top-mounted regulator that lets you adjust heat from table height. Humphrey circulators give you clean, warm air from the top, front and bottom... for perfect, even circulation of heat.



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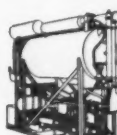
UNIT  
HEATERS



FURNACES



GAS  
AIR CONDITIONERS

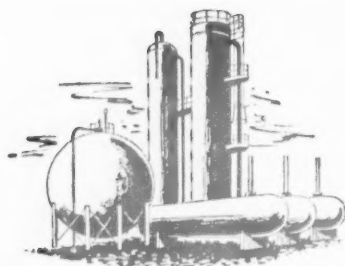


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## industry news

### *Tuloma to expand marketing, storage, production, transportation*

**A**N extensive nation-wide expansion program has been launched by Tuloma Gas Products Co.

"The plan calls for doubling our sales force as well as revamping our marketing organization. In addition, we will add to our underground storage, production and transportation facilities," said R. A. Carter, president.

Tuloma markets gas products in nearly all sections of the continental United States. Under the new program, marketing operations now handled by widely separated district offices will be consolidated. Centrally located regional headquarters will be established to coordinate the activities of the district offices. Many routine administrative matters now handled from Tuloma's general offices in Tulsa, will be assumed at the regional level.

Several new sales offices are to be opened during 1960. More regional and district offices are slated for 1961.

To support the expanded marketing activities, construction has begun on two additional salt cavity storage points for LPG. One, just outside Houston, will have a capacity of 70,000 gal. Another at Arcadia, La., is slated for completion this summer. Besides these two, Tuloma plans additional underground storage points in other parts of the country. It will also enlarge many of the existing sites.

During the coming year, the amount of LPG available to the company will be supplemented by products from new plants coming

on stream and from increased production at existing facilities, supply manager, K. V. Doughty, noted. Tuloma is currently supplied from 50 gasoline plants and refineries in 16 states. Many of these are owned or controlled by the company's affiliate, Pan American Petroleum Corp.

One of the most dramatic phases of the expansion program was announced in March BPN. Tuloma is pioneering the use of the world's largest tank cars, 30,000 gal. capacity giants publicly shown for the first time at the LPG convention in Chicago.

In addition to changes in its tank car fleet, the company intends to modernize its present LPG truck fleet, adding, among other things, 11,000 gal.-plus capacity semi-trailers to be delivered this spring.

#### **Whirlpool introduces new refrigerator**

Early fulfillment of Whirlpool Corp.'s pledge to the American gas industry was portrayed in late April when Whirlpool's Chairman of the Board, Elisha Gray, presented a model of the company's all-new RCA Whirlpool gas refrigerator, to Wister Ligon, president of the AGA.

Presenting the refrigerator, Gray pointed out that this was a symbol to the entire gas industry that Whirlpool has kept its promise to develop an all-new simplified gas refrigerator to back up the company's full line of RCA Whirlpool appliances.

"When Whirlpool purchased pat-

ent rights for the production of gas refrigerators in 1958, the company promised the gas industry that within three years it would introduce a completely redesigned unit with new modern styling," Gray stated. "Now, a full year ahead of this schedule, Whirlpool is honoring its promise. The 1960 gas refrigerator incorporates two years of intense research, engineering and development and a multi-million dollar investment in the future of gas refrigeration."

Gray added that production will climb from 50,000 units this year to 1,000 a day by 1963!

Chicago was the kickoff point for a series of hard-hitting national training meetings in which some 5,000 utility salesmen and retail appliance dealers are getting their first look at the new refrigerators. A forerunner to 90 such national meetings, the Chicago session attracted 600.

Nine factory teams were dispatched to all sections of the country to present the new three-model 13 cu ft gas refrigerator line during the months of May and early June.

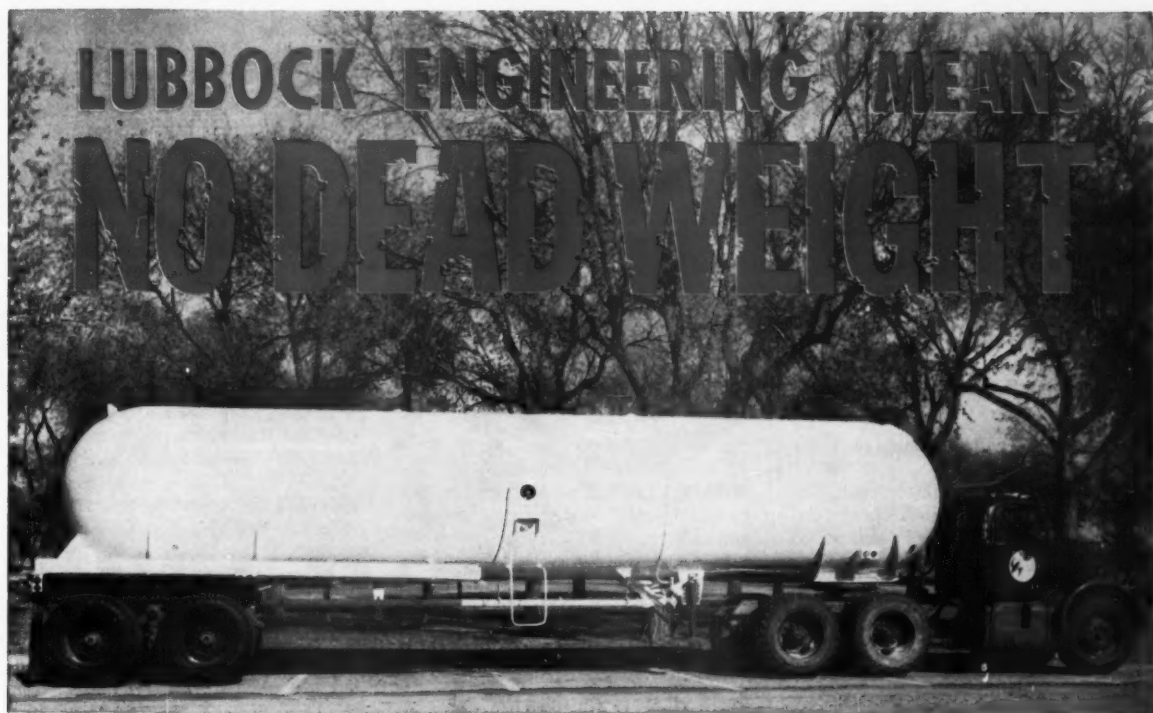
The program includes a 40-minute full color sound film which depicts new engineering improvements developed for the line, including production processes involving urethane foam, used for the first time as insulation throughout a refrigerator.

#### **Co-op sales continue increasing market bite**

Tax-favored cooperatives are increasing their sales, new government figures show.

Congress, in a politically-inspired mood to ignore the pleas of tax-paying business that the load be equalized, is doing nothing while





## For top profits check Lubbock Machine's "Higher Payload" Engineering today!

Examples of Lubbock Machine engineering which have increased payloads without added cost are shown above in the 11,000 gallon semi-trailer; and below in the 11,800 gallon bodyload and pup unit.

The secret is Lubbock Machine's attention to little things which add up to a big difference in payloads.

There is no excess weight in Lubbock units — the lightest weight material is used in every case where performance is equal. Let Lubbock Machine show you how en-

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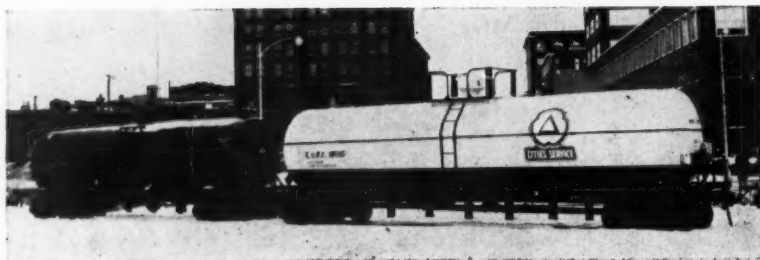


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**MACHINE & SUPPLY CO., Inc.**

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Compare the new Cities Service "king size" tank car (r) with a conventional car. The new car manages to increase capacity 76 per cent with a net weight increase of only 9.5 per cent. It's 7 ft. longer and 11 in. higher. Although the inside tank diameter is 17 in. greater, the overall width is the same as the old car.

the co-ops steadily increase their share of the market.

Latest figures available from the U. S. Agriculture Department show co-ops sold \$3.2 billion in goods in the year ending in mid-1958, an increase from \$3.15 the previous year.

Feed, petroleum products of all kinds, and fertilizer ranked in that order for the highest gross sales, with \$1.1 billion, \$896 million, and \$460 million, respectively. This was a \$50 million increase for petroleum products, more than twice the amount of the next largest increase.

Sales of "farm supplies" accounted for some 23 per cent of the total volume (\$14 billion) of all co-ops. Building materials accounted for \$111.5 million, farm machinery and equipment \$100 million, and containers \$56 million.

### Cities Service using 100 giant tankers

One-hundred "king-sized" non-insulated pressure tank cars have been delivered to Cities Service Oil Co., Bartlesville, Okla. These pressure cars—the largest of this type in operation—will be used primarily for transporting LPG from southwestern producing and storage points to customers throughout the nation.

The cars, recently approved by the Interstate Commerce Commission after extensive research and experimentation, have a water capacity in excess of 18,500 gal. Although only 16 per cent longer and 9.5 per cent heavier than the conventional LPG tank car, they carry 76 per cent more product. Since the new cars are equipped with roller bearings, "hot-box" delays will be eliminated.

Cities Service spokesmen expect widespread economies from the "jumbo" tank cars. Savings will accrue to the distributor, carrier,

consumer, and shipper, since it is possible to move approximately the same amount in one "jumbo" car as is normally loaded in two standard-sized cars with no increase in loading, unloading, switching, administrative costs or motive power. Chance for loss of product is substantially reduced.

### Service training course Book III now available

Book III of a four-part LPG service training course has been published by the University of Texas. Adaptable to home or classroom study, the book contains data on 1960-model appliances.

Book III has 26 illustrated chapters on gas storage and piping systems, home installation, venting, heating, air conditioning, and all major appliances. The text, edited by LPG engineers, has been field-tested by industry servicemen.

Three supporting books are included in the kit: an information manual, an assignment book and a test book. The home study kit costs \$5.75; the classroom kit, \$3.75; and the instructor's package, \$5.50. Send orders to the Industrial Education Dept., Division of Extension, University of Texas, Austin 12, Texas.

The fourth book, which covers carburetion, will be available soon.

## NEWS BRIEFS

Ten dealers in the greater St. Louis area banded together and sponsored a booth to promote LPG at the 1960 "Bildors" Home Show in March. To publicize their booth, ads were run in local Sunday newspapers, the dealers appeared on television and data was given to editors, public officials and builders. The cost of this endeavor was \$90 per company and resulted in an LPG prospect list of 1000.

National Cylinder Gas Division of Chemetron Corp. has moved its north-eastern regional accounting office from Cleveland to Bala Cynwyd, Pa. (in the Philadelphia area).

O. L. Garretson, formerly assistant to the president of National Propane Corp., New York, has resigned to form his own company. The new company, Plateau, Inc., has a refinery at Bloomfield, N. M. Primarily in the refining business, Garretson expects to remain active in the L. P. gas industry.

Leases have been signed for two new Sid Harvey stores, one in Scranton, Pa., the other in Binghamton, N. Y. The Scranton branch will be managed by Robert L. Bruch, former road salesman.

Charlie Wilkerson Gas Co., 4600 W. Highway 98, Panama City, Fla., has been bought by Bob Sowell and his father, Gene. The company's name has been changed to Sowell Propane Gas Service, Inc.

Outstanding L P G merchandiser, Kingsley Weatherly (featured as a top salesman in Dec., 1959 BPN) has announced that the firm he heads, National Utilities, Inc., is expanding in north Georgia. Present outlets in Cleveland and Dahlonega are expanding to include display rooms and plants. A new display room and plant is being set up in Blairsville. The company now operates in Winder, Stone Mountain and Gainesville, where it recently took over Metropolitan Gas.

The \$10,000,000 contract to build the Norge home appliance plant at Fort Smith, Ark., has been awarded. Total factory footage is one million sq ft.

Petrolane Gas Service Inc. estimates earnings for the 12 months ending March 31, 1960, are \$2.65 a share, compared to \$1.90 on less shares for the same period last year. This increase is due to "internal efficiencies and a stepped-up sales program as well as several large acquisitions this past year."

Increased distribution of Gaffers & Sattler ranges, furnaces and water heaters in the midwest and east was announced by Utility Appliance Corp. A company official also stated that a new line of water heaters for mobile homes will be announced in the near future.



## BIG WHEELS

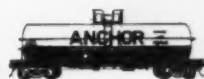
### ***in the business of supplying you with LPG***

Anchor's nationwide fleet of tank cars gets the LPG to you when you need it! Anchor rolling stock all over the United States has often been the answer to meeting emergency needs and solving

special problems. With more-than-ample facilities, and with an ideal of flexibility to meet your needs, Anchor has built an enviable reputation for service. We offer that service to you. Call now about a contract.

*Now Celebrating 20 Years of Service to the LPG Industry*

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## ASSOCIATIONS

### 2000 turn out for LPGA Chicago show; Munzer takes over as president

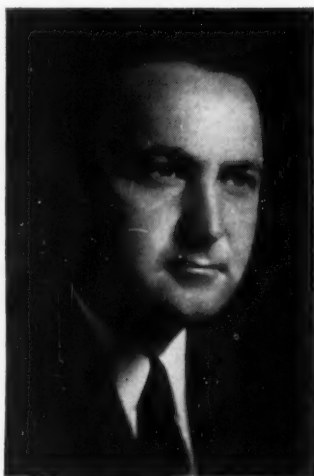
More than 2000 of the "faithful" made their yearly "pilgrimage" to the Conrad Hilton Hotel in Chicago last month to attend the Liquefied Petroleum Gas Association's annual convention.

R. J. (Rudy) Munzer of Petroleum Gas Service, Inc., Long Beach, Calif., was elected president of the LPGA. E. O. N. Williams of the Bottled Gas Corporation of Virginia moved up to the 1st Vice Presidency and W. A. Schuette, Hausgas, Inc., Washington, Mo., was elected to the 2nd Vice Presidency.

During the four days of meetings, fraternizing and viewing manufacturers' displays, the conventioners saw their new president take office, wished his predecessor their thanks and good luck and heard an ex-L.P.-gasman offer some sage words of wisdom. Add to that the eyeful of pleasure offered by the crowning of the first Miss International LP-Gas, the warm thrill of the awarding of the annual Distinguished Service Life Membership, and the climaxing joy of the Gas Flame Gaieties and it totals a welcome "Gateway to the Golden Sixties," the theme of the entire affair.

The convention got under way Sunday morning, May 1, with the Board of Directors meeting and the annual business meeting. That afternoon the exhibits opened and the delegates descended upon the 128 booths set up by the suppliers, manufacturers and other interested parties.

Monday's luncheon in the Grand Ballroom was one of the highlights of the affair. Kenneth R. D. Wolfe, vice president and director of the Fisher Regulator Co., was presented with the DSLM and its accompanying Seley Award. The industry's highest honor, awarded for outstanding contributions to its progress, was presented by Peter



R. J. MUNZER  
New president

A. Anderson of Portland, Me., a past LPGA president. Wolfe was cited for his 33 years' work in the development of pressure regulators and controls.

F. Leslie Fagan, retiring association president from Granite Quarry, N. C., followed by reviewing the LPGA's activities during the past year. He noted how at last the association was "being recognized by government bodies as an effective spokesman for our industry. . . ."

He also told of the American Petroleum Institute's formation of an LP-gas committee in its marketing organization and began studies



W. A. Schuette



E. O. N. Williams

Elected vice presidents

of how API can best help the industry. "This," he mentioned, "was a very significant step in the right direction and over the years can do us some good."

Fagan followed with some observations which he felt should be given immediate attention in the near future. These included the urging of members to renew their memberships early, thus allowing more time to "be spent selling the free-loader." He also noted the necessity for more service and management schools and the need for increased interest by the industry's members in the activities of government.

This last point set the stage for the featured speaker at the convention, Gov. Paul Fannin of Arizona. Gov. Fannin, an ex-LP-gas dealer, deplored "the inexorable drift of government authority from the local to the national level . . ." the effects of this drift and what the citizens must do about it.

He called a primary example of this drift the responsibility of the education of our children, which is "presumably reserved to the states and to the people. Yet, what do we see today? We see the Federal Government ready to step in with a program of Federal aid. This, of course, would presage Federal control."

Another point of extreme interest, shown by the numbers attending, was a series of roundtable meetings conducted during two days of the convention. The subjects covered were accounting, general management, LP-gas-utility cooperative programs, load building, and plant operations. The latter discussion, with well over 100 members joining in, covered the fields of routing and safety and efficiency in plants and on trucks. With R. H. Wherry of Southern Propane Co., Jesup, Ga., as discussion leader, those attending heard from Clark Jones of NFPA, among others. Jones pointed out the fact that most accidents are caused by difficulties in the accessories rather than in the tanks themselves.

W. A. Schuette of Hausgas, Inc., Washington, Mo., led the management discussion. In it eight vital problems facing LP-gas management were brought up before the 200 attending members.



# HELP

## IS YOURS FOR THE ASKING

As an LP-Gas marketer you need the help and cooperation of your supplier. You need a supplier who won't let you down when the demand for fuel goes up. You need a supplier who will assist you in planning a modern plant, work with you on special installations, and help you **SELL** more product.

Sinclair's expanded TRUFLAME LP-Gas Program can help you make more profits this year. There will be more product available, increased man power will help increase engineering services, and the new TRUFLAME 50/50 Advertising program is better than ever.



*If you are in this area, or on the fringe, you can become a Sinclair TRUFLAME LP-GAS distributor. Write for complete information today.*



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Those problems were:

1. What is the best way to pay salesmen to get the most effective results?

2. What margin per gallon is necessary for profitable bulk operation?

3. What elements make up a good credit control system?

4. How do you keep employee production at the highest possible level?

5. In the face of growing competition, how to maintain business, keep customers and maintain the load level?

6. How can we get competitive dealers to come to the LPGA meetings?

7. How to raise money for expansion?

8. What changes might be required in LP-gas management upon the entrance of an LP-gas pipeline into a former tankcar area?

The Wednesday night banquet and Gas Flame Gaieties brought congratulations to the newly elected officers and closed out the convention.

### Two good examples set

#### by New England LPGA meeting

"Gas versus electricity," was the theme of the New England LPGA spring meeting in Montpelier, Vt. Planned because of intense activities of Vermont electric power companies, the program featured Court Turner of Fuelane Corp. Turner presented 51 specific advantages for LPG over electricity.

If enough dealers write the New England LPGA requesting the highly competitive material presented during the program, it will be reproduced. While slanted at electric competition in Vermont, the material applies equally to any area in the U. S.

The same type of forward thinking was evidenced by the group's quick action in quashing an overdramatized television program in the "Rescue 8" series. "A Three-Mile Bomb," based on a tipped butane tank truck incident, is dramatized out of all proportion and contains incorrect material and half truths. New England LPGA learned of the film's content the day before it was to be run by a Boston station. Arguing that the

dramatization was derogatory to a large, important industry, and not in the public's best interests, the group succeeded in stopping the program.

### Kansas LPGA convention provides profit for '61

With attendance up 33 per cent from last year, the Kansas LPGA convention (Wichita, April 10-11) managed to make a small profit to promote the '61 convention.

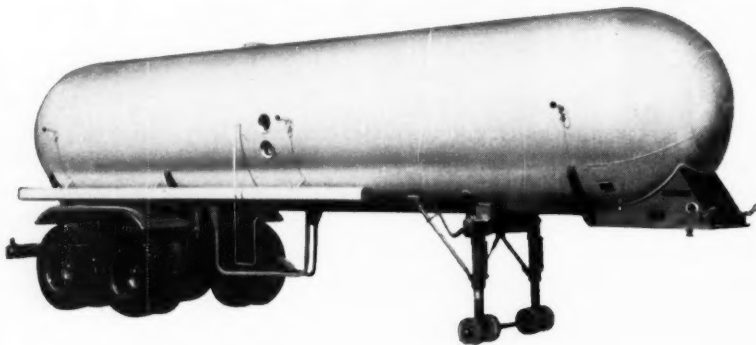
New officers elected were: George E. Ross, Hutchinson Butane Co. Inc., So. Hutchinson, president; Frank Groves, Groves Oil Co., Arkansas City, vice president; and Leo Jenkinson, Consumers Butane Co., Kiowa, secretary-treasurer.

### Iowa governor cautions businessmen in politics

"Does the American businessman have the ability to place welfare of society above the welfare of himself?" This was the question posed by Iowa Governor Herschel Loveless at the recent Iowa LPGA convention.

"Getting businessmen into poli-

## NEW FRUEHAUF LPG Tanks Priced to **SELL!**



**\$11,950 F.O.B. PHILADELPHIA**

(Incl. Fed. Excise Tax)

**2** 8,500 gallon T-1 Propane—250 P.S.I. For operation in: N.Y., N.J., Pa., Md., and Del. Serials C-40519 and C-40520.

**\$11,017 F.O.B. FT. WAYNE**

(Incl. Fed. Excise Tax)

**1** 8,210 gallon T-1 Propane—250 P.S.I. For operation in: N.Y., N.J., Pa., Md., and Del. Serial FW-115650.

**\$9,625 F.O.B. SPRINGFIELD**

(Incl. Fed. Excise Tax)

**2** 7,000 gallon A-202—Propane and NH<sub>3</sub>—265 P.S.I. Legal in all states with 59,220 gross 2-axle tractor and tandem-trailer. Serials C-39884 and C-39885.

For Forty-Six Years—World's Largest Builder of Truck-Trailers

### FRUEHAUF TRAILER COMPANY

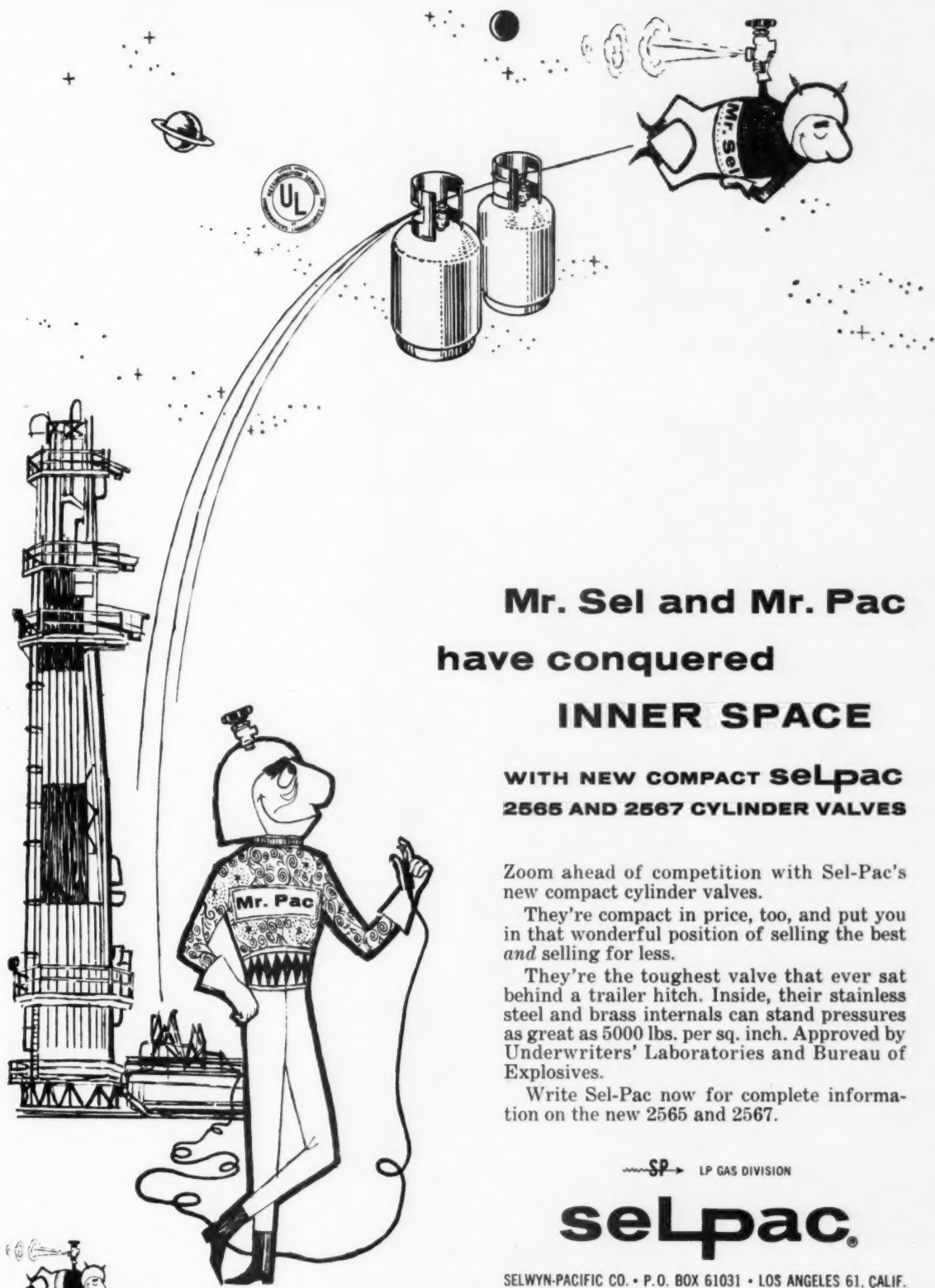
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... or **ANY** Fruehauf Branch!





## Mr. Sel and Mr. Pac have conquered INNER SPACE

**WITH NEW COMPACT selPac  
2565 AND 2567 CYLINDER VALVES**

Zoom ahead of competition with Sel-Pac's new compact cylinder valves.

They're compact in price, too, and put you in that wonderful position of selling the best and selling for less.

They're the toughest valve that ever sat behind a trailer hitch. Inside, their stainless steel and brass internals can stand pressures as great as 5000 lbs. per sq. inch. Approved by Underwriters' Laboratories and Bureau of Explosives.

Write Sel-Pac now for complete information on the new 2565 and 2567.

SP → LP GAS DIVISION

# selPac®

SELWYN-PACIFIC CO. • P.O. BOX 61031 • LOS ANGELES 61, CALIF.



DIVING DIVISION

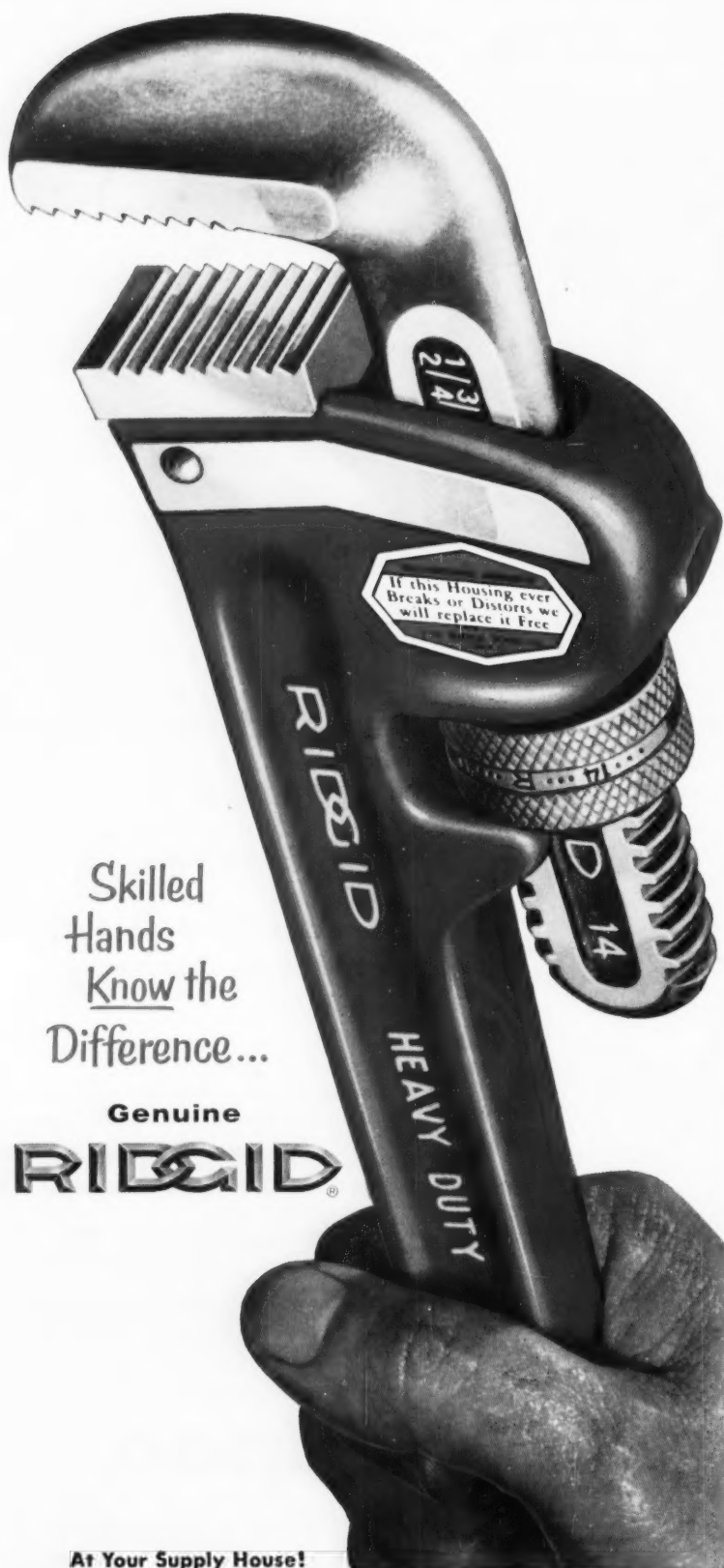


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FIRE EXTINGUISHER DIVISION

ENGINEERED TO SPACE AGE SPECIFICATIONS



Skilled  
Hands  
Know the  
Difference...

Genuine  
**RIDGID**

At Your Supply House!

**The Ridge Tool Company, Elyria, Ohio, U.S.A.**

tics is fine," he concluded, "if they try to be helpful, not if they try to destroy."

The 160 LPG men attending the Des Moines meeting elected new officers. Wes Birdsall of Davidson Gas & Electric Co., Osage, heads the group as president. Walter Christopherson of Spencer Bottle Gas Co., Spencer, is vice president and Wm. Jenkins of Iowa Automatic Gas Co., Early, is secretary-treasurer. New directors elected besides Birdsall and Christopherson are Paul Wilson, Bottled Gas Corp., Bettendorf, and George Vogl of Omaha Blaugas Co., Omaha.

#### **Dealer Sales aid approved by Council**

Members of the National LP-Gas Council will receive more sales building benefits as a result of actions taken by the Council's executive committee and board of directors at recent meetings in White Sulphur Springs, W. Va. The board approved the dealer sales aid committee policy to offer a new anti-electric booklet and revised tractor and full-line L. P. gas folders to members only.

Two booklets, one "LP-Gas on the Farm," and the other on industrial uses of LPG, are planned.

Advertising for the Council's sweepstakes, to be held late this summer, includes full-page ads in *American Home*, *Better Homes and Gardens*, *Farm Journal* and time on the Don McNeill Breakfast Club. Top prize is a \$25,000 all-LPG home. Additional prizes are a \$2,000 tractor and 150 household appliances.

The board decided to invite other gas organizations to join a subcommittee to promote the LPG industry's 50th anniversary in 1962.

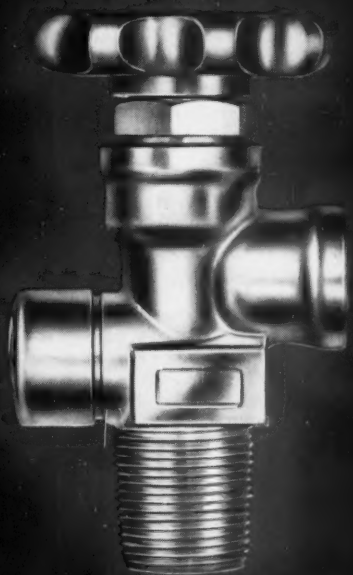
#### **ASSOCIATION NOTES**

"Hazards of Static Electricity," a U. S. Bureau of Mines program, was staged at nine local Oklahoma LPGA meetings during the first half of May.

Credit and collections, records and cost analysis, sales promotion and public relations, insurance and safety; those were the chief topics taught at an L. P. Gas Management Institute held recently in Little Rock, Ark. The two-day session was jointly sponsored by the Arkansas Butane Dealers Assn. and the Distributive and Industrial Education Service of the State Department of Education.



## LOWEST PRICE?



## LOWEST COST?



## WHICH WILL YOU BUY?

There's never been a product that couldn't be imitated in surface appearance, made with less expensive materials and less attention to details, and sold at a lower initial price. The valve on the left, for instance, *looks* very similar to the genuine RegO at right. RegO customers have learned, however, that where dependability and performance are of importance, it's always false economy to

use any equipment but the best. RegO valves represent the extra quality that means complete satisfaction...job after job...year after year. RegO believes that service and value are more important than first cost—and their customers agree. That's one more reason why RegO has an outstanding reputation for top quality when you buy...complete on-the-job satisfaction for the years to come!



RegO No. 3103CO

Diaphragm cylinder valve for vapor withdrawal, with shut-off valve and integral safety relief valve. Used on ICC cylinders of 200 pounds propane capacity or less.



RegO No. 8103CO

O-Ring cylinder valves with exceptional sealing quality. For ICC cylinders up to 100 lbs. propane capacity. Low cost, yet excellent quality performance. Filling rate: 9.3 GPM at 10 PSIG differential!



RegO No. 3101CI

Multi-purpose diaphragm cylinder valves, for liquid or vapor withdrawal service where separate safety relief valve is provided. Standard service line valve for individually fitted ASME systems.



RegO No. 2547

Plumber's pot valve with built-in FINE FLAME control...used on 20 lb. LP-Gas cylinders as shut-off, control valve, and as adapter for plumber's melting pot tripod.



RegO No. 7149R

Tamper-proof, for safety and security for LP-Gas field equipment. Includes safety relief valve, excess flow valve in the inlet and tamper-proof back check valve in outlet.



RegO No. 8100

For lift truck cylinders. Combines cylinder valve and Safety Check Connector in one compact unit. Includes O-Ring stem seal, back seat feature, top-quality forged brass body.

# REGO

For complete details and prices write:

The **BASTIAN-BLESSING** Company

4201 West Peterson Avenue, Chicago 46, Illinois, Dept. 31-F

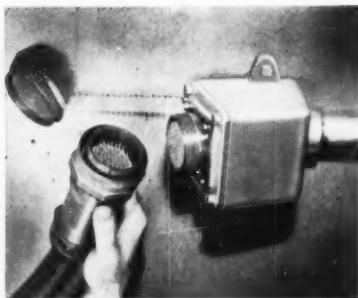
DO YOU KNOW  
It will pay you  
dividends to join!





For further information on any items in this section use the convenient Univac Readers' Service postcards on pages 73, 74.

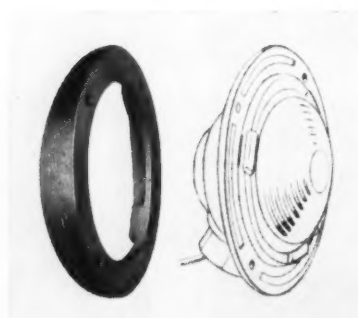
## New Products and Free Literature



**Connectors will operate from —80 deg F to plus 225 deg F**

Circle 1 on Readers' Service Card

Electrical connectors (GEC 320) made of all aluminum alloy components are moisture-proof, shock-insulated, dust-tight and corrosion-resistant and withstand pressure of 300 psi internal. Another feature of these plugs and receptacles is positive polarization. Crouse-Hinds.



**Adapter mounts clearance lamps on curved surfaces**

Circle 2 on Readers' Service Card

This Betts B-60 clearance lamp adapter (GEC 040) matches the B-60 lamp housing. The back of the adapter is concave, to fit the contour of a 6 in. radius. Betts Machine Co.



**Pressure regulator converts L. P. gas and natural gas**

Circle 3 on Readers' Service Card

Designed for trailers and mobile homes, this gas pressure regulator (GEC 700) is now available for appliances using LPG or natural gas. The Maxitrol RV-31C features a "select-a-gas converter" for changing from one gas to the other. Mounted on top of the regulator and protected by a shield, the converter has a cam switch that is thrown by inserting a screwdriver. Maxitrol Co.



**Fitter's cutting torch minimizes operator fatigue**

Circle 4 on Readers' Service Card

A lightweight top-lever fitter's cutting torch (GEC 780) is ideal for one-hand operations, thus minimizing operator fatigue. The injector mixer completely mixes the gases, resulting in a fast starting preheat. Available in three different models. Harris-Calorific Co.



**Propane furnace hardens and melts**

Circle 5 on Readers' Service Card

This propane-burning furnace (GEC 870) hardens and heat treats steel tools and melts copper, silver and gold. For hardening, it rests horizontally on a cast iron base. For melting, it's supported in an upright position on firebrick. Rexo-Therm, Inc.



**Burner balanced for fingertip control**

Circle 6 on Readers' Service Card

This LPG weed burner (GEC 080) covers two or three miles of ditch bank per hr. Its boom fits tanks from 28 in. to 48 in. in diameter, and is balanced for fingertip control and instant handling. The boom adjusts to either side in a full 180 deg. arc. The three burner heads adjust for near or far banks and burn a 48 in. wide area. Manchester Tank & Eqpt. Co.

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or to get the Trade Literature offered . . .

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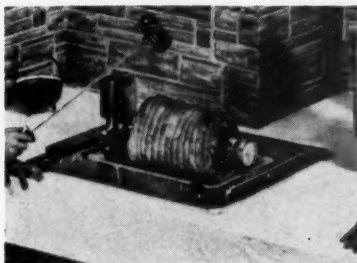
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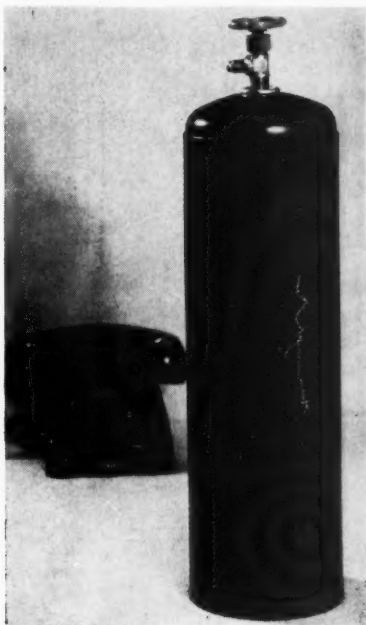




### Rotisserie converts to vertical broiler

Circle 7 on Readers' Service Card

Ease of installation, compact dimensions, new styling and versatility are highlights of the Maitre D' drop-in counter top unit. (GEC 240). Only one cutout is needed, since the cooking control is at the top. Heat is supplied by twin high-speed radiant gas burners engineered to provide clean, smoke-free cooking without an exhaust system. A built-in meat thermometer tells when meat is rare, medium or well done. Conversion from rotisserie to vertical broiler is made by removing spit and inserting twin adjustable broiling racks. Geo. D. Roper.



### New cylinder is disposable

Circle 8 on Readers' Service Card

This super size disposable cylinder (GEC 260) with 10 lb water capacity is 5 in. in diameter and 16½ in. long. It has working pressures up to 240 psi and is said to be the only disposable cylinder of its size. Tube Manifold Corp.

## 'FUSTEST' with the MOSTEST

List of a few Smith Pump firsts:

- ★—First with balanced gears to eliminate bearing loads.
- ★—First with hardened and toughened shafts.
  - First with exchange—replacement pump plan.
  - First with carbon-graphite bearings instead of fast wearing bronze.
  - First with mechanical shaft seal.
- ★—First having mechanical shaft seal built as unit with shaft and outboard bearing, to make replacement easy and fool proof.
  - First with hardened gears for longer wear.
  - First with Ductile iron housings.
- ★—First with super-hard gears in bulk-plant pumps.
  - First with Underwriters' laboratories approval.
- ★—First with Super-hard gears in truck pumps.
- ★Indicates features still exclusive with Smith Pumps.

**RIGHT NOW**, any Smith pump made after 1945 can be modernized at the factory with all the improvements since that date. This gives you a pump that passes the same tests as a new one and carries the same guarantee, all for less than the cheapest pump you can buy.



Murray 2-2293 and Murray 2-2491

**SMITH PRECISION PRODUCTS COMPANY**

1135 Mission Street, South Pasadena, California

Southeastern Distributor: **Pand-Johnston Inc.** Warehouses in Mobile, Ala.; Jacksonville, Fla.; Dallas, Tex.  
Western States Distributor: **Tecna Products, Inc.**, 3920 West Burbank Blvd., Burbank, California



For delivery truck service where flexibility is desirable.  
20 GPM at 500 RPM or  
35 GPM at 900 RPM  
model TC-2.



For average truck service.  
50 GPM model TC-3.  
Flanges Available.



For "high flow" delivery truck service.  
100 GPM model TC-3.  
Flanges Available.



For trucks with automatic transmission.  
50 GPM model ATC-3.  
100 GPM model ATC-3.



Will fill all small tanks as fast as any larger pump.  
10 GPM models EC-1, EG-1, MC-1, and GC-1.  
15 GPM model EC-H.



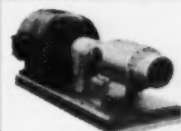
For small volume transfer work.  
20 GPM model MC-1044.  
35 GPM model MC-1044H.



For medium volume transfer.  
50 GPM model MC-2 or MC-20 (higher pressure, quiet running).



For large volume transfer.  
100 GPM model MC-3.  
Flanges Available.



For high capacity loading.  
150 GPM model MC-4.



—guarantees a longer lasting, more brilliant finish

**GAS CYLINDER  
ALUMINUM PAINT**

ILLINOIS BRONZE POWDER COMPANY, INC.  
2023 S. CLARK STREET CHICAGO 16, ILL.

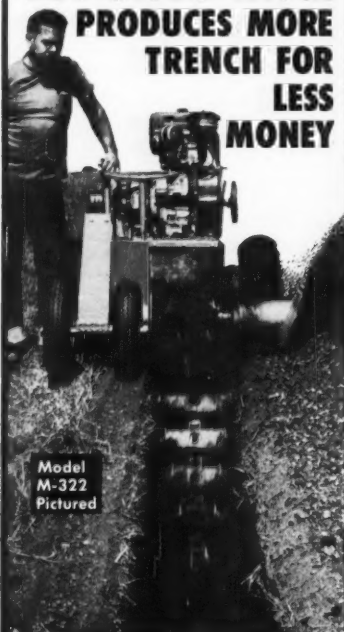


**"More or Less"  
THE BEST**



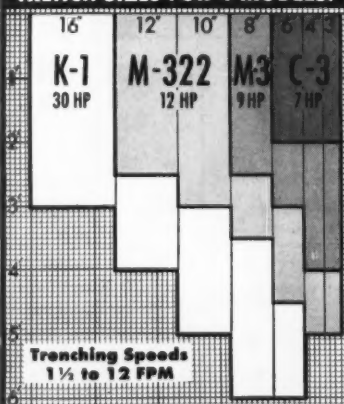
Other trenchers cost "More or Less"  
Other trenchers dig "More or Less"

**BUT DITCH WITCH  
PRODUCES MORE  
TRENCH FOR  
LESS  
MONEY**



Model  
M-322  
Pictured

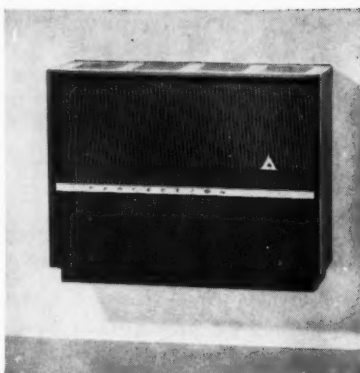
**TRENCH SIZES FOR 4 MODELS:**



- USE FOR:**
- Utility Services
  - Gathering Lines
  - Signal Lines
  - Sewer Laterals
  - Road Crossings
  - Sprinklers
  - Footings, etc.

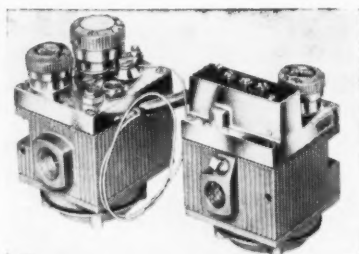
**CHARLES Machine Works, Inc.**  
616 B Street • Perry, Okla.

To Locate Distributor, Look Under "Contractors Equipment" in 1960 Metropolitan Telephone Directory Yellow Pages for Ditch Witch Trade-mark; or Call Collect FE 6-4404, Perry, Okla.



**Fine styling distinguishes  
new wall heater line**

Circle 9 on Readers' Service Card  
Styled like modern furniture, the Perfection "Safety-Sealed" gas wall heaters (GEC 420) have a completely sealed combustion system. The heater can be installed on any outside wall and needs only one small opening for the adjustable vent. Hupp Corporation.

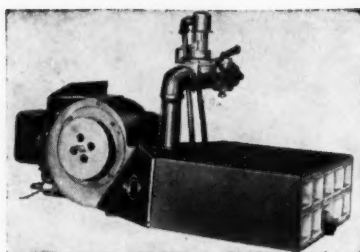


**Surface control knobs  
facilitate adjustment**

Circle 10 on Readers' Service Card  
This straight-through gas valve (GEC 420) for space heaters, comes in two basic types for either mechanical or electrical temperature control. Adjustment knobs are on one surface. In model 159RMS (l.) a thermo bulb and a standard-length capillary tube (18- or 36-in.) provide mechanical thermostatic control. An electric actuator allows remote electric thermostatic control in model 159RE (r.). Optional features of the valves include a right-angle outlet and a built-in pilot filter. Controls Co. of America.

**Floodlight covers entire  
area 30 ft from fence**

Circle 11 on Readers' Service Card  
For increased property and plant protection, Type PLB Fresnel (GEC 320) fence floodlights provide a band of light that will discourage and intruders. Crouse-Hinds Co.



**Fan-Air gas burners provide  
100,000 to 3,500,000 Btu/hr**

Circle 12 on Readers' Service Card  
New input capacities of 100,000 to 3,500,000 Btu/hr and lower prices of the Junior "Fan-Air" gas burner (GEC 420), offer new opportunities for moderate-investment conversions of furnaces, boilers, incinerators, and process equipment. Operating with air from a low speed fan, the burners have removable gas jets which atomize unrestricted air and metered fuel supply in each of four burner ports. The Mettler Co.



**Lowboy gas water heater  
has lifetime burner**

Circle 13 on Readers' Service Card  
A low cost automatic water heater (GEC 860) is lined with "Luster-glass" to prevent rust. Insulated to keep water hot longer, it uses minimum floor space (18 in. for 30-gal.) and has quick recovery. Lovekin Water Heater Co.

**Dual-flame weed-burner  
weighs only 3 lb**

Circle 14 on Readers' Service Card  
The Super 8 LPG weed burner (GEC 001) shoots out dual 6-ft flames. Its 8-ft tubes are of 1/4 in. aluminum and have a corrosion and flame resistant aluminum coating. Its design features enable an unskilled person to use it with expert results. Manchester Tank & Equipment Co.



**FOR PETGAS IN MICHIGAN . . .**



## **a BIG unit for a BIG job**

In the "wolverine" state of Michigan, sound engineering design and careful transport fabrication plays an important part in the operations of companies like Petgas.

Trinity Steel recently delivered the above unit (perhaps the largest T-1 blimp LPG transport in Michigan) to Mr. Lou Marshall of Petoskey to meet the following specifications: payload — 9500 W.G., 9' axle-to-axle tandem rear wheels, two 3" unloading outlets, two 2" vapor openings, splash fill, special recessed relief valves (with provision for 3" depth anti-freeze capacity), recessed roto-gauges, x-rayed and magnafluxed, flexible baffles, meets "thaw law" of state, bull-plug construction eliminated for safety, 49' bumper to bumper, gross loaded weight (with tractor) — 76,500 lbs.

Special Duco finish over sand-blasted steel for extra durability. Meets all ICC tests and requirements.

On your LPG requirements, *BIG* or small, give Trinity a call. Complete handling, from design through financing.



# **TRINITY STEEL CO., INC.**

4001 IRVING BLVD. — DALLAS, TEXAS — FL 7-3961.

Latin American Division: Tanques de Acero

Trinity S. A., Calle Peniente 150, #734, Mexico

16, D. F. Plant and Sales Office. Plants in: Dallas,

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DOMESTIC



STORAGE



DELIVERY



TRANSPORT

## TO CUT YOUR TANK PAINTING LABOR COSTS!



**Paint in windy weather and  
get a more uniform finish.**

- ★ 40% QUICKER
- ★ 40% LESS MATERIAL
- ★ NO MESS OR MUSS ON  
YOUR CUSTOMERS'  
PREMISES

### Crew Kit includes:

2—9" ROLLERS (WITH  
THREADED HANDLE)

4—9" REAL LAMB'S WOOL  
ROLLER COVERS

2—FOUR FT. EXTENSION  
POLES

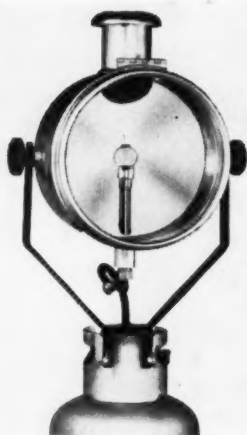
2—GRIDS FOR 5 GAL.  
BUCKET, ONLY **\$12<sup>25</sup>**

# SPATZ

PAINT INDUSTRIES, INC.

5237 Manchester Ave.

St. Louis 10, Mo.



### LPG floodlight provides quick, versatile light

*Circle 15 on Readers' Service Card*

This new portable LPG-burning floodlight (GEC 470) gives up to 15,000 candle power, using a 14-in. reflector. The light features a new type of mantle—a mantle within a mantle—secured to the burner at both ends. The completely self-contained light mounts on standard 20 lb LPG tanks or heavy duty telescoping stands. The light ignites instantly in temperatures down to 40 deg below zero and is totally weatherized. Wm. Lee & Son.

### Microvac wired in series with LPG solenoid valve

*Circle 16 on Readers' Service Card*

The Beam Microvac Vacuum Safety Switch (GEC 200), for LPG industrial trucks is wired in series with the L. P. gas solenoid valve to open the solenoid circuit. With this safety measure, there is positive fuel shut-off when the engine stops. Enclosed in the unit is a miniature micro switch with contact points that have positive snap action to prevent arcing. Beam Products Mfg. Co.

### Fire extinguisher rated at 160-B:C

*Circle 17 on Readers' Service Card*

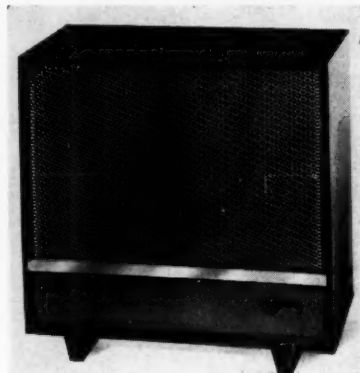
The highest rating ever granted a fire extinguisher by Underwriters' Laboratories has been awarded this 350 lb dry chemical wheeled extinguisher. During UL tests, it put out gasoline fires of up to 400 sq ft in 11 seconds. Its rating is set at 160-B:C because of the design, which increases rate of flow and distribution of dry chemical. Ansul Chemical Co.



### Combustion chamber eliminated in infra-red gas burner

*Circle 18 on Readers' Service Card*

Due to a design which eliminates the need for a combustion chamber, this high-radiation burner's combustion takes place within its fluted refractory. It attains operating temperatures to 2600 deg. F., and provides from 150 Btu to 3000 Btu per linear in. The burner (GEC 080) is suitable for oven, conveyor, rotary drum and roll dryer applications. Red-Ray Mfg.



### Heaters look like Hi-Fi sets

*Circle 19 on Readers' Service Card*

Console-furniture designs of both vented and unvented heating circulators (GEC 420) are added to Armstrong's 1960 lines. An 8,000 Btu vented circulator is designed for bathrooms, small trailers and truck cabs. Other vented models are 15,000, 20,000 and 30,000 Btu. Armstrong Products Corp.

### Windproof jet burners eliminate complicated setups

*Circle 20 on Readers' Service Card*

The Adams sports heater and the Adams sports cooker (GEC 240) are two firsts in radiant-type, windproof jet burners. Compact, lightweight and portable, the units meet the demands of hard outdoor use. Adams Bros. Mfg. Co., Inc.



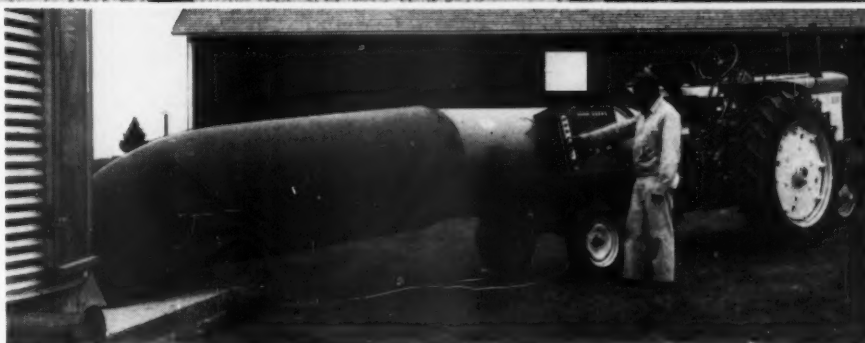
# HIGH-CAPACITY CROP DRYERS

another way John Deere helps  
to bring customers your way



Dryers like the 458 Grain Dryer, above, and the 88 Portable Crop Dryer, right, help introduce LP-Gas to farm users.

Other John Deere farm equipment with LP-Gas option includes tractors, combines, cotton pickers, irrigation engines.



No need to tell you—the farm market for LP-Gas can be an important source of off-season volume. When you encourage crop drying, you take a big step toward balancing your distribution load.

John Deere Crop Dryers are introducing more and more farmers to the convenience and efficiency of clean-burning LP-Gas.

You can recommend John Deere Dryers with confidence. They set new standards of easier, safer, more dependable operation. Their top-grade plumbing, automatic electronic safeguard system, and full thermostatic control help increase the confidence of your customers in the use of LP-Gas.

The batch-type 458 Grain Dryer features a unique blending system and unmatched fan performance for fast, uniform drying; indicator lights to guide operation; improved long-life conveyors. The 88 Portable Crop Dryer has the same fan, burner, and controls, plus three protective air filters.

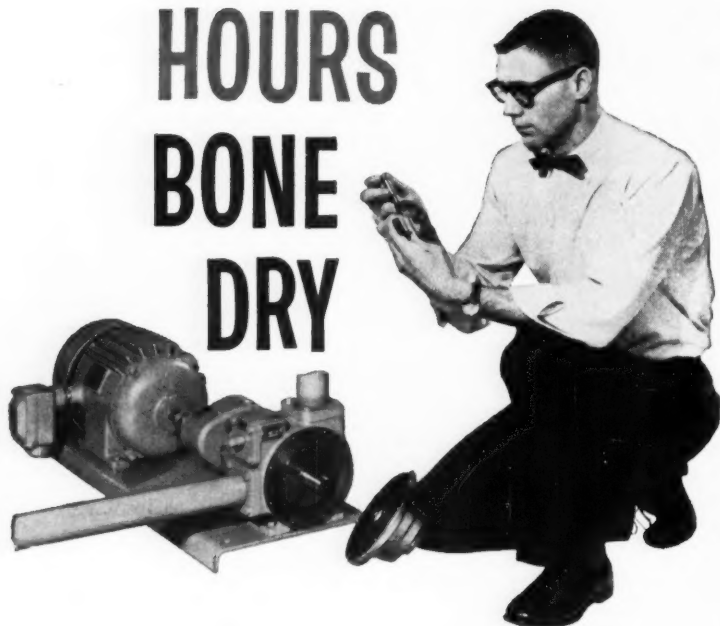
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3300 RIVER DRIVE • MOLINE • ILLINOIS

# 2000 HOURS BONE DRY



## Blackmer Pump passes toughest test

When a customer asked us how well our pumps would wear, we had these facts to tell. In one of the toughest pumping tests ever devised, a 2-inch Blackmer pump was driven at top speed for 2000 hours, running absolutely bone dry. Vane wear was detectable only with a micrometer . . . proof positive Blackmer pumps can take it. And, even when vanes do show wear after years of use, they are easily and inexpensively replaced. Aren't these a couple of good reasons why you should use Blackmer pumps? Write for Bulletin 500.



"liquid materials handling"® equipment

# BLACKMER / liquefied gas pumps

BLACKMER PUMP COMPANY, GRAND RAPIDS 9, MICHIGAN

Find your Blackmer Man under "Pumps" in the Yellow Pages

## The HIDY DEGREE-DAY RECORDER WILL SAVE YOU UP TO 30% ON TRUCKING AND BOOKKEEPING COSTS

Would you pay \$95 a year rental or a modest purchase price to save up to 30% on your bookkeeping and trucking costs? That's what hundreds of users of the HIDY degree-day system are saving every year. With this system you can deliver more gallons per mile—make fewer trucks do the same job. Can be bought or leased. In use in all parts of the country. The most accurate, easiest to install, simplest to maintain degree-day recorder on the market—and that statement is backed by \$1000 reward for anyone who can prove otherwise! Write for full story of this money-saving, work-saving plan—ask for Bulletin JBP.

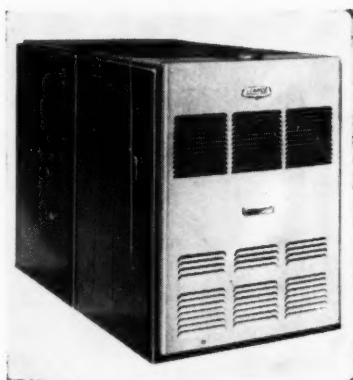
Please state whether you already operate on Degree Day system.

HIDY-BROWN RECORDER COMPANY

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RD. CINCINNATI 30,  
OHIO



(Note: Some territories still available for sales representatives. Write for information.)



## Leaves room to stack cooling coil on top

Circle 21 on Readers' Service Card

Ideal for basements or low-ceiling rooms, this low profile forced-air gas furnace (GEC 420) is only 39¾ in. high and can take a five-ton cooling coil. Main features are a welded steel wafer-type heat exchanger; long, slotted-port burners; a floating "Hushtone" blower and a hammock-type air filter. Only 31 in. wide, the unit can be installed with only 1 in. clearance to combustibles on each side. Lennox Industries, Inc.

## Portable bender shapes metal and wire

Circle 22 on Readers' Service Card

Precision bending of sheet metal and wire into any shape is now possible with a portable bender (GEC 770). It bends sheet metal up to ¼ in. thick by 1¼ in. wide. The bender exerts up to 2000 lb pressure to form metal against angle and curve dies and is complete with interchangeable angle and radii dies. It can be held in the hand or vise clamped. The Hahn Co.

## Boiler delivers 360 gal. per hr.

Circle 23 on Readers' Service Card

The new Hydrotherm R-300 hot water boiler (GEC 860) is designed for large residences and multi-family dwellings. Exclusive of flue and draft hood, it measures 21 in. by 31 in. by 36 in. The boiler delivers 360 gal. of water per hr. at an 80 per cent temperature rise. The absorption unit, rated at an input of 300,000 Btu per hr., has a zig-zag water flow which eliminates by-passing of boiler water and hot spots. Hydrotherm, Inc.

## FREE LITERATURE

### Valves and refrigeration data

Circle 24 on Readers' Service Card

Two catalogs (GEC 820) have been released by Madden Brass. No. 160 describes new general purpose valves and other industrial products. No. R460 lists complete line of refrigeration and air conditioning products. Madden Brass Products Co.

### "Swift Switch"

Circle 25 on Readers' Service Card

Mechanics, operation, and installation of the Lennox power gas conversion burner (GEC 420) are explained in four-page bulletin No. GC-571-M8. "Perfect for those hard-to-convert burners," the compact unit enables one man to make a swift switch to gas heat, has a wide input range and an exclusive ignition system. Lennox Industries, Inc.

### Transfer pump prices, tips

Circle 26 on Readers' Service Card

Service Bulletin No. 111 and the current price list covering the Blue Gas Transfer Pump are now available. The bulletin tells how to select the proper type oil to use. Farmers Tool & Eqpt. Co.

### Booklet on fluorescent paint

Circle 27 on Readers' Service Card

"Pyralux," a fluorescent safety enamel (GEC 610) is shown in a booklet printed in fluorescent colors—vermillion, yellow, orange and red. They have four times the daylight brightness of conventional hues. Du Pont Co.

### Help appliances breathe

Circle 28 on Readers' Service Card

Metalbestos service bulletin No. 6 tells "How Gas Appliances Became Air Starved." When their air supply is inadequate, they operate erratically or not at all. But, because replacement air and venting are interdependent, lack of air can be corrected. Metalbestos.

### Ford truck specifications

Circle 29 on Readers' Service Card

Complete specifications on Ford's entire 1960 truck line (GEC 790) are contained in an eight-page folder. Data on GVW's, axle ratios, engine torque ratings, com-

# Facts for LP-Gas Jobbers...

LP-Gas Jobbers buy direct from Pure Oil—producer of its own LP-Gas.

PURE ships promptly in any weather in its own tank car fleet, or by transport truck.

PURE owns many sources of LP-Gas to insure jobbers of a steady supply; and PURE's production capacity continues to increase.

PURE's huge underground storage facilities assure you a supply of LP-Gas when you need it most.

Rigidly-maintained quality of PURE's LP-Gas guarantees customer satisfaction.

PURE's sales representatives will assist you with business-building ideas.

Why not start now to do business with a supplier whose reputation and performance strengthen yours. Call or write the Pure Oil office nearest you. Do it today.



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pression ratios, axle and spring capacities is included. Also illustrated are standard equipment, regular production options, pre-approved options and dealer-installed accessories to custom build trucks. Ford Motor Co.

## Horizontal furnace

Circle 30 on Readers' Service Card

An illustrated brochure shows space saving installations and an add-on cooling section for horizontal gas-fired winter air conditioners (GEC 420). Janitrol Heating and Air Conditioning.

## Rigid meter bar bulletin

Circle 31 on Readers' Service Card

A wide variety of rigid meter bars are described in the 8-page bulletin 200-2 (GEC 560). Three basic types are listed: union, sleeve, and compression. Eclipse Fuel Engineering Co.

## Gas cock bulletin

Circle 32 on Readers' Service Card

Construction features of all Eclipse gas cocks are shown in their two-color bulletin 600-2. The gas cocks have an iron body with brass core of standard or "retained key" type. Eclipse Fuel Engineering Co. (GEC 820).

## "Heat Makers"

Circle 33 on Readers' Service Card

"Brilliant Fire Heat Makers" (GEC 420) an eight-page catalog No. 7106 illustrates and describes vented console models, unvented circulator heaters and unvented wall heaters, unvented utility heaters and gas fireplace log models. Ohio Foundry and Manufacturing Co.

## Swimming pool heat loss

Circle 34 on Readers' Service Card

Three handy charts (GEC 860) give exact radiant, evaporative and convective heat losses once wind, humidity and air temperature are determined. Rite Engineering Co.

## Accuracy of Wet Test Meter

Circle 35 on Readers' Service Card

Details on American Wet Test Meters are provided in Bulletin 501. It describes capacities, calibration, indexes, dimensions, and special models. Design features, construction materials and the high degree of meter accuracy for laboratory use is covered. American Meter Co. (GEC 560).



JAMES L. BROWN has been named northern Ohio and southern Michigan district sales manager for Stewart-Warner Corp.'s heating and air conditioning division.

WILLIAM S. BIGELOW—from assistant to the controller to manager of the new insurance and safety department, Suburban Propane Gas Corp., Whippany, N. J. L. A. AUSTIN—from safety inspector to safety engineer for the new department. KENNETH F. BISHOP—from field appraisal representative to manager of Suburban's district at Derby, Conn.

JAMES S. ALEXANDER—from assistant account executive at Jaqua Co., Grand Rapids, Mich. to advertising and sales promotion manager of Blackmer Pump Co.



T. M. Isaacs  
Robertshaw-Fulton



J. S. Alexander  
Blackmer Pump

THOMAS M. ISAACS, formerly industrial advertising program supervisor at Reynolds Metals Co., is director of advertising and sales promotion for Robertshaw-Fulton Controls Co.

MARLIN D. BELL — from district manager, Mid-America Appliance Corp., Omaha, to sales representative in Iowa for Caloric Appliance Corp., Jenkintown, Pa.

GEORGE B. TUGGLE—from vice president to senior vice president, Honolulu Gas Co. Ltd., Honolulu, Hawaii. He succeeds L. LYMAN GOWANS who retired last year.





J. A. Storm  
Sinclair Oil & Gas



W. A. Raney

A. T. SCHERER, retires as sales director for Sinclair Oil & Gas Co. JOHN A. STORM—from assistant sales director to sales director. W. R. RANEY—from gas products manufacturing to assistant sales director.

Hydrotherm, Inc., Northvale, N. J. has added four sales representatives: WILLIAM L. WILSON, Brooklyn, for Brooklyn and Queens, N. Y.; C. J. ZIAMANDANIS, Albany, for that district; J. P. Ashcraft Co. Inc., Oklahoma City and Tulsa, for Oklahoma; and Equipos y Accesorios Hidraulicos, Mexico City, for Mexico.

HOLLY BIRD—an engineer with major oil companies and the chemical and petroleum industry is now sales representative for Master Tank and Welding, Dallas.

BEVERLEY L. BRITTON—from news bureau manager of the Martin Co., Baltimore division, to public relations director for Robertshaw-Fulton Controls Co., Richmond, Va.



B. L. Britton  
Robertshaw-Fulton



H. Bateman  
Cities Service

LLOYD A. LYND—from treasurer to financial vice president and chief financial officer of Cities Service Oil Co., Delaware. G. R. PRESTON—from assistant treasurer to treasurer and member of the board. HARRIS BATEMAN of Bartlesville, manager of engineering and purchasing and coordinator between headquarters and the Chicago marketing division, has been elected as a vice president.

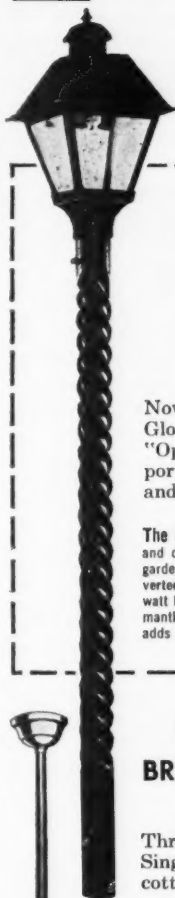
**NOW YOU CAN SELL MORE GAS LIGHTING WITH**

## *The Complete Line*

**OF GENERAL GAS LAMPS**

*Announcing*  
**the NEW**  
**"MATCHED PAIR"**

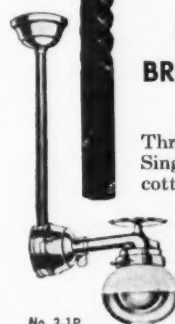
**for modern, gracious**  
**outdoor gas lighting**



Now—the new "Gay-Lawn" (left) and "Cheer-Glo" (right) added to the popular line of Humphrey "Opalite" gas lamps give you more gas lighting sales opportunities than ever before! No other maker offers *both indoor and outdoor* lamps for so many uses at such competitive prices.

**The Gay-Lawn.** Lights the way for friends and discourages intruders. Sell it for patio, garden or driveway use. Famous No. 8 inverted super-bright mantles are bright as a 50 watt bulb—far brighter than most "upright" mantles. Exclusive Humphrey "spiral post" adds distinction offered by no other lamp.

**The Cheer-Glo.** Says "welcome" at the door or mounts on outside wall facing patio, porch or garage. Same high quality as Gay-Lawn. Both lamps have non-corroding aluminum burner parts with brass valve and removable plug for easy lighting. Rust resistant coated steel post, enameled finish.

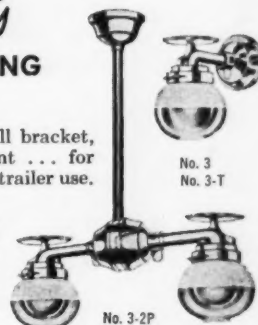


No. 3-1P

## *HUMPHREY Opalites*

**BRING YOU GAS LIGHTING**  
**for indoors, too!**

Three styles to choose from . . . Wall bracket, Single Pendant and Double Pendant . . . for cottage, cabin, mobile home or travel trailer use.



No. 3  
No. 3-T

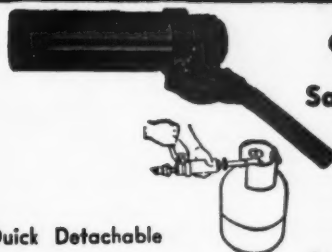
Three lustrous anodized finishes available. Choose from handsome copper, gleaming brass or polished aluminum trim to suit any decorative scheme. Other superior Humphrey features: "Oven type glass" globes, ceramic burner noses, shock resistant "Beret" mantles and non-rusting construction.

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**Parkhill**

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**Repairs are easy**  
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**Nozzle Parts**  
**Adaptors, to pipe-**  
**Acme-POL**

**Quick Detachable**  
**Overall Length**  
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475 Huntington Drive, San Marcos, Calif.

STEVE FLIGELMAN — from general manager of United Petroleum Gas Co.'s northern division, to vice president and general manager of St. Paul Corrugating Co., St. Paul, Minn. LEROY A. SWANSON — from purchasing agent to general manager of the northern division. BERT C. ARMSTRONG — from assistant purchasing agent to purchasing agent at UPG.

ROBERT B. DAVIS has been appointed to the position of assistant general sales manager, The Tappan Co., Mansfield, Ohio. He will take on these duties in addition to heading Tappan's built-in sales division.

D. THOMAS WEBSTER — from manager of L. P. gas sales to product manager

of the gas range division. MARTIN V. WOLF has been named to the new executive position of manager of contract sales.

ROBERT J. FOSTER — from gas range sales in Pennsylvania to Eastern division manager for Geo. D. Roper Sales Corp. He succeeds Wm. J. FOSTER, now vice president and director of sales in Kankakee. SOL W. WEILL — from sales promotion manager to eastern merchandising manager.

HARRY PEARSON — superintendent for a large oil concern in Texas, is now sales representative for Master Tank and Welding, Dallas.

WANZ CASTLE — from Chance Vought Aircraft, Flight Test Division, Dallas, to director of advertising and sales promotion and assistant sales manager for Rochester Gauges Inc. of Texas, Dallas. CASTLE succeeds JACK PERCY who has moved into sales.

#### DEALERS

JOHN P. YOUNG — from manager of Suburban Propane Gas Corp.'s Derby, Conn. office, to district manager of the company's Mt. Kisko, N. Y. branch.

ELLIS J. McCLANAHAN — recently retired vice president and director of Standard Oil Co. of California, and chairman of the board and president of Standard's Western Operations Inc.; to the board of directors of Suburban Gas, Pomona, Calif.

E. DEAN STUTZMAN — from service manager to vice president, Propane Industrial Service, Inc., Willoughby, Ohio. CHARLES P. HENDRICKS is the new service manager.



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... stands for the substantial financial resources required to expand facilities and service to any interested dealer.



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... stands for the personal service and sincere interest in dealer success that has been the basis of the company's overall operation since its very inception.



... stands for a dealer-oriented, progressive company that would welcome the opportunity to discuss an LPG contract with you.

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Thermogas Co. of Des Moines has elected three directors: RICHARD RUSSELL, JOHN LEWIS and CLIFFORD LUNNING. RUSSELL is director of advertising, Des Moines; LEWIS is in charge of the company's farm sales division; and LUNNING is general manager of Thermogas companies in Madison, Beloit and Lone Rock, Wis. Other appointments: MAURICE MAHER — from vice president and general manager in Des Moines to purchasing agent for Thermogas plants in Iowa, Wisconsin, and Illinois. MRS. EMMA ALBRIGHT — from assistant secretary to secretary. CHARLES YOUNG — from retail manager to general manager, Knoxville, Ia. CARL HESS — from branch manager to general manager, Audubon, Ia. ROBERT NAUGHTEN — from assistant manager to general manager, Storm Lake, Ia. GERALD ALLEN was transferred from Storm Lake to Des Moines as general manager. MARVIN JONES — from field representative to assistant manager, Ottumwa, Ia. Newly appointed branch managers: WAYNE DALLENBACH, Pocahontas, Ia.; ARCHIE FLEMING, Lone Rock, Wis.; ROBERT ZIRKLE, Beloit, Wis.; KENNETH WEINHOLD, Madison, Wis.; HENRY STETTLER, Washington, Ia.; CHARLES LONBAKER, Fairfield, Ia. FLEMING, ZIRKLE and STETTLER were formerly retail managers of their respective branches. WEINHOLD was office manager in Madison. ELMER SCHMIDT, safety engineer, retired April 1, after 27 years of service in Des Moines.

## CALENDAR

All associations  
are invited to send  
in the dates of their  
forthcoming meetings

June 6-9—Iowa Midwest L. P. Gas Engine School—Iowa State College, Ames, Iowa.

June 9-11—Western Liquid Gas Association Convention and Trade Show—Statler Hotel, Los Angeles, Calif.

June 12-13—Butane-Propane Institute of Louisiana Annual Convention—Monteleone Hotel, New Orleans, La.

June 13-15—2nd Annual Mo-Ill L. P. Gas Exposition—Chase Hotel, St. Louis, Mo.

June 16—New Jersey LPGA Summer Outing—Riverton Country Club, Merchantville, N. J.

June 21-22—Pennsylvania LPGA Summer Meeting—Galen Hall, Wernersville, Pa.

June 26-28—Minnesota LPGA Summer Convention—Grand View Resort near Brainerd, Minn.

June 27—Virginia LPGA Meeting—Tides Inn, Irvington, Va.

June 27-28—Montana-Wyoming LPGA Joint Convention—Jackson Hole, Wyo.

June 29-July 1—Texas BDA's 15th Annual Convention and Southwest L. P. Gas Market—Baker Hotel, Dallas, Texas.

June 30-July 1—Michigan LPGA Summer Convention—Blaney Park Resort, Upper Peninsula, Mich.

July 17-19—Colorado LPGA Convention—Boulder, Colo.

July 24-26—Alabama LPGA Convention—Grand Hotel, Point Clear, Ala.

August 7-9—New Mexico Convention and Trade Show—Albuquerque, N. M.

August 14-16—Kentucky LPGA Convention—Kentucky Hotel, Louisville, Ky.

August 21-23—Idaho, Nevada, Utah Tri-state Convention and Trade Show—Shore Lodge, McCall, Idaho.

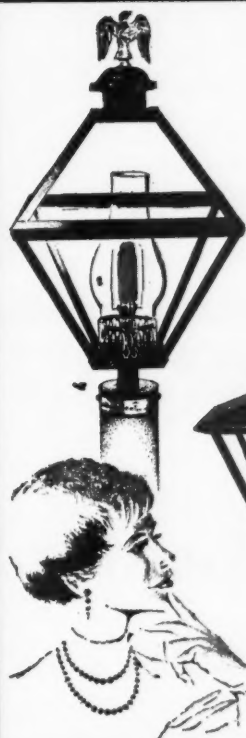
September 11-13—Florida LPGA Annual Convention—Hotel Robert Meyer, Jacksonville, Fla.

September 13—Pennsylvania LPGA Annual Convention—Holiday Motor Motel, Mechanicsburg, Pa.

September 16-17—Wisconsin LPGA Fall Convention, Maxwelton Braas Country Resort, Bailey's Harbor, Wisc.

September 18-19—Virginia LPGA Annual Convention—John Marshall Hotel, Richmond, Va.

October 11-12—Northeast LPGA Convention—Ambassador Hotel, Atlantic City, N. J.



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expressions of gracious living... silent  
announcements of the ultimate  
in good taste. Golden-crested  
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Heat and vibration-proof, non-solvent, will not shrink, crack or crumble. Makes all assemblies leak-proof and pressure-tight. Prevents rust, corrosion and joint seizure.



7 BASIC BLENDS

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LOOSENS  
RUSTED BOLTS

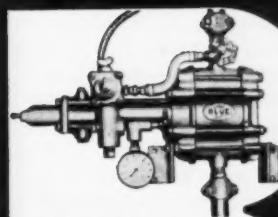
A powerful blend of fast-acting solvents that literally "melt the rust away"—safe on all metals and alloys.



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VAPOR OPERATED  
GAS TRANSFER PUMP

Power is extracted from a small quantity of high pressure gas. Uses only 1/30th or 1/10th as much gas as the bleeding method. Vapor loss extremely low. Transfers up to 24 gallons per minute in the field without danger.

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• Beginning a new series by carburetion engineer John E. Hallberg

# CONVERT your way to PROFITS

## Part I—Getting Started

**T**HE valley that lies between the Rockies and the Coastal Range and stretches from northern California to the Canadian border is perhaps one of the most fertile strips of land on the west coast. Many modern farms in the area grow an abundance of vegetables and process them for the market, so summertime is a busy season.

The local L.P. gas dealers realized that—since their domestic customers had changed over to natural gas, their only alternative was to take advantage of the busy period and sell carburetion to the farmer. So successful was this plan that now the summer season is by far the busiest time for the L.P. gas dealers, too!

If you're not operating profitably, don't close up shop. Expand your thinking. Carburetion conversions can be the profit-balancing factor; if not the major source of income.

The object of this series is to point out to the future carburetor dealer some factors to help him make conversions PROFITABLY. It is true that almost any engine can be converted to LPG. But it is *not* true that it can always be done profitably, or to the satisfaction of the customer.

Before you do anything about becoming a carburetion dealer, hesitate awhile and plan your approach. One of the most common misconceptions is that you must have heavy financial backing to become a successful carburetion man. Nothing could be further from the truth; *but you must have a plan?*

If you are making the transition from merely selling L.P. gas to installing carburetion, the cost of the transition will be somewhat less than if you were starting from scratch. You already have a place of business and a truck. The main cost would be the tools.

If starting from scratch, you will need a truck of some kind and a complete set of tools, plus an income to pay for the rent until business begins to pay for itself. To arbitrarily set a definite figure on the amount of cash required would be difficult because of such factors as rent and personal commitments.

In the first place, L.P. gas must be available to you and the cost must compare with that of gasoline, or there will be little chance of selling carburetion.

If you are in the city, your major markets will be forklifts, industrial engines, front-end loaders, refrigeration trucks, and automo-

biles. Look over your area very carefully. Ascertain where your competition lies and to what extent carburetion is being used.

If you live in the country, your best bet is farm tractors, combines, cotton-pickers, and off-the-road vehicles. Many farmers already use L.P. gas in their domestic appliances and probably have storage tanks in their back-yards. It would be relatively simple to show them the advantages of converting *all* their farm equipment to L.P. gas.

During a slow period, one Los Angeles carburetion dealer drove through the local country-side with a pair of field-glasses. Whenever he saw equipment working in the fields, he examined it with his field-glasses to see if it had been converted. It was not long before he had more orders for carburetion than he could handle!

No doubt it will not be necessary for you to go to the same extremes, but you will have to make calls on equipment owners in your area. At first, the orders will be difficult, but each conversion will—or should—be your recommendation to obtain more work.

Having determined where your market lies, contact carburetor manufacturers. They will be glad



to supply you with up-to-date information on their equipment.

Next, contact a reliable person who is familiar with L.P. gas carburetion in your area. Find out how one manufacturer's equipment stacks up against another. Look for quality. Never sell anything you would be ashamed of using yourself. Plenty of good equipment is available, so handle what you consider the best. Naturally, some equipment is better suited to one application over another. This you will only learn from experience.

The best way to obtain experience is to attend one of the many carburetion schools. All the reliable manufacturers sponsor these classes from time to time. Ask about them. It will be well worth your while to attend.

The quickest way to learn more about carburetion—after you have graduated from school—is to make the installations yourself. You will learn many wrinkles and methods to cut costs.

Armed with sufficient knowledge, and having decided which carburetion equipment will best suit your purpose, you can plan your sales approach. This does not have to be an expensive undertaking. Here again, the manufacturer can help you with free literature.

There are many ways to outfit a garage or workshop for carburetion work. The governing factor is the type (or types) of vehicles you plan to convert. However, small hand tools will be the same in all cases, so plan on the following:

- 1 set open end wrenches.
- 1 set sockets and ratchets.
- 1 set screw drivers.
- 1 set 1/16 to 1/2 in. drills.
- 1 set 3/16 to 1/2 in. N. C. taps.
- 1 set 1/8 to 1/2 in. pipe taps.
- 1 set tap wrenches.
- 1 pair electric pliers.
- 1 1/4 in. electric drill.
- 1 3/8 in. electric drill.

These should be sufficient to make a start, but try to build up a comprehensive stock of tools. In addition to the above you will need:

- 1 compression gauge.
- 1 timing light.
- 1 exhaust gas analyzer.
- 1 0 to 15 P.S.I. pressure gauge.
- 1 0 to 300 P.S.I. pressure gauge.

It is absolutely essential that you evaluate the condition of the en-

gine by comparing individual cylinder pressures; and the compression gauge is used for this. You will need a timing light to re-time the ignition after making a conversion. The exhaust gas analyzer is your most important tool because all LPG carburetors (unlike gasoline carburetors) have adjustments to set: idle, power and economy. This can only be done satisfactorily with an exhaust analyzer. Most L.P. gas converters contain two or more stages of regulation, usually designated primary and secondary. The 0 to 300 P.S.I. gauge is to test primary regulators; the 0 to 15 P.S.I. gauge, to test secondary regulators.

If you decide that most of the work will be done in your shop, it will not be necessary to have much portable equipment. A drill stand and a grinder, plus electric and gas welders will be useful tools.

On the other hand, if most of your installations are in the field, all your tools will be carried in your truck. A small portable welder can be taken along for welding brackets for the converter or filter. Since most of your tools will be carried with you, you will not need an outfitted garage. You will, however, require a small building for storing carburetion equipment and housing your truck.

In choosing stock, it is not necessary or even wise to have a large amount of equipment on the shelves. Money tied up in stock will never pay for its keep. But, it is very important to have the correct stock on hand. This is where good planning pays off. If the conversion is being made in the field, be sure to have everything necessary to do the job completely. Nothing will eat up profit quicker than time wasted traveling back and forth from the job simply because you forgot a fitting or picked up the wrong carburetor.

You will note that in some parts of the country one make of vehicle is preferred over another. For example, in the East Clark 2,000 lb to 4,000 lb lift-trucks may be the most prominent. On the West coast, Tow-Motors may be more numerous in the same category.

The idea, then, is to know the trend in your territory and plan the most efficient method of converting that particular line of ve-

hicles. You may have to make special brackets, etc., but make them on your "bread and butter" project. The majority of your conversions will be on the same vehicle. *Get to know it thoroughly.* This is the way conversions are made profitably.

Once in a while, you will be asked to convert some "odd-ball" piece of equipment. If the carburetion is available, go ahead and convert it, but don't make a point of deviating far from standard engines.

All manufacturers have catalogs. Learn to use them properly. This saves time and leads to better customer satisfaction. Before you tie up the vehicle for conversion, decide exactly where you are going to place the converter, filter, and fittings. Plan the installation from beginning to end so it will be a one-shot affair. Above all, make it a neat job, one your customer will be proud to show his friends, one that you can use as a reference in obtaining other jobs. One good installation can win you three new ones; one bad one can lose you ten.

It is always easy to convert new vehicles, but most of your work will be on old ones. Thus, extra caution should be used in checking the engine before making the conversion. Put special emphasis on the ignition system. It takes a hotter spark to fire L.P. gas. Poor ignition, coupled to poor compression, is death to good engine operation. Don't ask the customer how the points are—*check them*. If there is any sign of corrosion or pitting, insist that they be replaced. Check the plugs yourself — *take nothing for granted*. Once you have made the installation, every malfunction of the engine will be blamed on the carburetion and on your ability as a mechanic. Ninety per cent of all service calls can be traced to ignition trouble, particularly where old equipment is involved.

Your manufacturer has a suggested retail price on all his equipment. Follow his price list, and establish a flat rate for your work. No one complains of paying good money for work well done, so make a reasonable profit for yourself. Develop new customers by good workmanship, service and dependability. ■

# CLASSIFIED Advertising



## HELP WANTED

**EXPERIENCED L. P. CARBURETION SALES & SERVICE MAN.** Must be able to install and service all types of Carburetion, set up a Sales Program and train Branch Managers. Excellent opportunity with large West Coast retail and wholesale L.P. Gas Company. Furnish complete details including recent photo. Reply Box 24, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

**DEALERSHIPS OPEN: EXPERIENCED MAN IN LPG, bottles and bulk.** Agency Agreement. Good opportunity if has railroad siding and spur. **RESTRICTED TERRITORIES. WE FURNISH EVERYTHING.** Tank Car material. Butane or Propane. Ross Oil, Inc., Belleville, Illinois.

## HELP WANTED—Cont.

### LPG SALES ENGINEER

National designer and manufacturer of LPG Domestic, Storage, and Transport Vessels requires services of thoroughly experienced salesman with wide following among dealers and transporters. Salary, commission and expenses. Require two men—one, Dallas based for State of Texas; the other man will be based to sell Minnesota, the Dakotas, Montana, Wyoming and Nebraska. Send complete resume—photo, education, work background and references . . . to E. E. Garnsey, VP Charge Sales, **TRINITY STEEL CO., INC.** P. O. Box 10587 Dallas, Texas

## FOR SALE—TRUCKS-TRAILERS—Cont.

1953 FAUBIAN PROPANE TANDEM TRANSPORT, TRACTOR 1956 INTERNATIONAL 190, air, both units excellent condition, major overhaul, LPG carburetion, propane saddle tanks, 2" pump. Twin tanks, new paint, 5600 water gal., ready for the road. Picture upon request. \$5,995.00. Houston Propane Gas Company, 1512 Orleans, Keokuk, Iowa. Phone 2401.

6500 GALLON DOUBLE BARREL TRANSPORT, with 1955 International R200 C.O.E. truck, L.P. gas equipped, with pump. Good condition. \$6,500.00. Complete, ready to go. O. K. Propane Co., Edna, Kansas. Phone WAbash 2-3201.

1—5500 W. C. PROPANE—built 1953. Rego axles, 10:00x20 Rubber, air, Budd wheels, spare tire carrier, 3" Excess flow valve. Homan landing gear. Excellent condition. Photo available. 1—3600 W. C. Propane. Single axle. Cast wheel, 10:00x20 Rubber—good, spare carrier, \$2,000.00. Keeth Gas Co., Inc., Box 1177, Lovington, New Mexico.

NEW AND USED DELIVERY UNITS—200 and 250# W.P. 1000 gallon to 1800 gallon, single and twin barrel. \$1500.00 up. **PAT & CHUCK SUPPLY CO.,** The Tradingest Monkeys in Texas, P. O. Box 15333, Fort Worth, Texas. Ph. JE 6-2848.

1050 GALLON SINGLE BARREL tank complete pump, etc., on 1953-170 International truck. Will trade or finance. L & L Motor Co., 1813 E. Cypress, Enid, Oklahoma.

## LPG FINANCIAL EXECUTIVE

\* Large Midwest Company is establishing a new sizable LPG Operation. Need financial executive to evaluate possible acquisitions and to guide the financial aspects of business. Please send complete resume including salary requirements. All replies held in complete confidence.

Write today

BOX 32

Butane-Propane  
News

198 S. Alvarado Street  
Los Angeles 57, Calif.

## SITUATIONS WANTED

NEED AN EXPERIENCED, LIVE WIRE Manager? Can handle all your operation. Will consider investing. Reply Box 36, BUTANE PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

**L.P. PLANT MANAGER OR CARBURETION** sales and service. Ten years experience in management, sales promotion, carburetion, service. Prefer Western states. Reply Box 27, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

## BUSINESS OPPORTUNITIES WANTED

WANTED TO PURCHASE: RETAIL LP-GAS business in Midwestern or Southeastern states. Reply Box 13, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

WANT TO PURCHASE: LPG Business. Prefer college town, but not essential. Will consider part interest. Reply Box 31, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

## BUSINESS OPPORTUNITIES OFFERED

**LPG BULK PLANTS.** WE SPECIALIZE in selling petroleum properties throughout Midwest. Have number desirable plants for sale. **OLE BRODD, PETROLEUM MARKETERS,** 605 Produce Bank Bldg., Minneapolis, Minnesota.

## FOR RENT or LEASE

6,000 to 30,000 PROPANE STORAGES for sale, rent or lease. Financing and installation available. Reply Box 16, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

## FOR SALE — TRUCKS - TRAILERS

USED PROPANE DELIVERY TRUCKS, 1200 GALLONS W. C. Presently in use and being replaced with larger units. United Petroleum Gas Co., 4820 Excelsior Blvd., Minneapolis 16, Minnesota.

**SPECIAL SALE:** Two single axle propane tank trailers. One—Black-Sivalls, twin tank, 4120 gallon capacity. One—Quaker City, 4000 gallon capacity. Both with 5 hp., electrical pump motors. Terms available. Berman Sales Company, Pennsburg, Penna. ORleans 9-7911.

## SPECIAL NOTICE! BUTANE-PROPANE DEALERS

**Earn More Money Hauling More Gas and Less Steel . . . Load and Unload Faster**

Balanced Nor-Tex units escape the annual Federal tax on trucks that weigh more than 13,000 lbs. Users everywhere praise the Nor-Tex 2500 WG Single Barrel Payload Special of 202B X-rayed material. Weighs only 12,890 lbs. Completely equipped with High Flow Plumbing, Meter, Hose, Hose Reel, Fire Extinguisher and mounted on cab-forward truck with 108" cab to axle dimension. Increased capacity pump boosts deliveries to 50 GPM. Vapor manifold permits easy, simultaneous loading and unloading of twin tanks with either compressor or liquid pumps. These popular, carefully engineered and sleek designed Nor-Tex Single and Twin units are produced in four attractive models: The "Standard"—The "Custom"—The "Payload" "Special" and the "De Luxe." That's not all! Twin units, up to 2000 WG, are mounted on 84" cab to axle. Start hauling more gas and less steel. Do it profitably and in much less time.

For prices, phone, wire or write  
**NORTH TEXAS TANK CO.**  
Denton, Texas DUpont 2-5416.

## FOR SALE USED PROPANE TRUCKS

Several late model, 1000 to 1500 gal. . . re-conditioned and ready to roll. Easy Terms. We Trade. New Trucks too.

**WHITE RIVER DISTRIBUTORS**  
Phone RI 3-2374—Batesville, Ark.

2069 W. C. 250# TANK, Print-O-Meter, 50 GPM Smith Pump, 100' 1" hose on electric reel, on 1955 2 1/2 ton V-8 Studebaker, 5-speed transmission, 2-speed axle, Century carburetion. 4 new 12-ply tires on rear. This heavy-duty Unit now in service at

**LIBERTY PROPANE CO.**  
Arcata, California \$3,000.00

## NEW! PROPANE TRUCK TANKS

**SINGLE UNITS—Up to 2800 Gal.  
TWIN UNITS—Up to 2200 Gal.**

Lightweight A-202B or C-1056 Steel . . . X-Rayed . . . Latest Code. Completely Plumbed . . . 4 Models. Fleet Prices All Makes Trucks. Let Our 15 Years Experience & Thousands of Satisfied Customers be Your GUARANTEE of Satisfaction.

10% Down . . . 36 Months on Balance  
No Red Tape on Financing.  
Trade With a Trader . . . Save Money.

Call or Write . . . **PRESTON GRACE**  
**WHITE RIVER DISTRIBUTORS**  
Batesville, Ark. — Ph. RI 3-2374

# CLASSIFIED ADVERTISING

## FOR SALE—TRUCKS - TRAILERS - Cont.

USED PROPANE DELIVERY TRUCKS: 1953 GMC, 1600 Gallon W.C. \$1,350.00; 1957 GMC, 1800 Gallon W.C. \$4,000.00. Presently in use, being replaced with larger units, both in excellent condition. Reply Box 28, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

## FOR SALE—TRUCKS - TRAILERS - Cont.

NEW AND USED—200 & 250# W.P. trailers—5000 gallon to 10,600 gallon. \$2295.00 up. Will take your old unit in trade and finance balance up to five years. We give MORE for your old trade-in. PAT & CHUCK SUPPLY CO., The Tradingest Monkeys in Texas, P. O. Box 15333, Fort Worth, Texas. Phs. JE 6-2848.

## HURRY! SAVE NOW ON USED TRANSPORTS!

A good selection of blimps and neck-down models are now available, ranging in size from 6800 W. G. to 7500 W. G. All have been completely repainted and refinished. Tires are in good condition and all are equipped with adjustable upper 5th wheel. \$750 down, balance \$196 per month.

SUPPLY LIMITED . . . FIRST COME, FIRST SERVED . . .

call or write today!

TRINITY STEEL CO., INC.

4001 IRVING BLVD., DALLAS 12, TEXAS Phone: FL 7-3961

## FOR SALE—TANKS - CYLINDERS

FOR SALE: 60 LB. \$9.00; 100 LB. \$10.00; Butane Gas Tanks available immediately; F.O.B. Cincinnati, Rural Natural Gas Co., P.O. Box 867, Cincinnati 1, Ohio.

1—ONLY 1000 GALLON LPG SERVICE Station Unit with 1 Hspr. Corken Compressor, Meter and Hoses, A-1 Condition. \$1,450.00. Reply Box 29, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

## MOTHBALL PLANT

All or Part! Never used yet kept new with nitrogen! Will relocate as complete atmosphere-creating industrial or bottle gas plant with excellent N. E. Illinois present location available! Composed of two 30 M propane tanks; vaporizer, etc.; compressor; pumps; T.C. & T.T. risers; 900' fence; etc., etc.

BOX 12, BUTANE-PROPANE News  
198 So. Alvarado St., Los Angeles 57, Calif.

## PROPANE GAS SYSTEMS

"Listed by Underwriters' Laboratories, Inc." If you use as many as one load of tanks per year, it will pay you to contact us. Distribution throughout the Mid-West and Southern states.

LOWRY TIMS COMPANY

Quality Steel Products Division, Cleveland, Miss.

## NEW MOTOR FUEL TANKS

14 x 51—31 Gal.—w/back brackets .....\$57.30  
18 x 42—40 " ..... 64.95  
20 x 42—50 " ..... 67.50  
22 x 68—102 " Step tank w/brackets.... 79.95  
CALL US FOR MANY MORE BARGAINS IN  
NEW AND USED CARBURETION.

Pat & Chuck Supply

"The Tradingest Monkeys in Texas"  
P. O. Box 15333 Ft. Worth, Texas

## WANTED—MISCELLANEOUS

WANTED: 30,000 GALLON USED TANKS. Will consider 18,000 gallon also. Reply to Midwest Bottle Gas Co., 119 North 3rd Street, LaCrosse, Wisconsin.

WANTED TO PURCHASE: 4,000 to 5,000 Gallon Single Barrel Butane Semi-trailer. Mesker Sanitation Co., 1300 Airport Road, Wichita 9, Kansas.

STORAGE TANKS, ONE OF 1,000 water gallons capacity and other of 1,500 water gallons capacity, both for 250 lb. pressure. State price, name of manufacturer and all details to: Central de Gas, Apartado Postal #491, Chihuahua, Chih., Mexico.

## WANTED USED 500 and 1000 Gallon Propane Tanks

WRITE OR CALL  
GRASSO BROS.

3800 Reavis Barracks Rd., St. Louis 25, Missouri.

## FOR SALE—MISCELLANEOUS

DECALS MADE FOR TRUCKS, EQUIPMENT. Small or large quantities. Catalog free. Mathews Co., 827 S. Harvey, Oak Park, Ill.

FOR SALE: ONE HIDY-BROWN DEGREE Day Recorder. Perfect condition, now in daily operation. O'Connor Gas Corporation—Fond du Lac, Wisconsin.

DIXIE SEMI-LOCK HOODS, ALUMINUM and Aluminum coated steel. Wall bracket or free standing. GUARANTEED mechanically for life. \$3.00 up. Dixie Manufacturing Company, Elizabethtown, Kentucky, Box 65. Phone Collect RO-5-9229.

## BRAND NEW ENSIGN CARBURETION

#8290 Carb.	—	\$18.00
3941 "	—	23.00
3984 "	—	24.50
3680 "	—	22.00
Mod. "R" Vap.	—	39.95
Mod. "NG" "	—	44.95

Used DIX adapters—Miscel. sizes—\$4.95 each

Pat & Chuck Supply

"The Tradingest Monkeys in Texas"  
P. O. Box 15333 Ft. Worth, Texas

## SERVEL REFRIGERATORS

4 & 6 cu. ft.—U-type Evaporator

6-7-8 cu. ft. Cross-top Freezer

Clean—Guaranteed—Low Cost Shipping

FRED A. BROWN COMPANY

170 W. Cumberland St., Phila. 33, Pa.

Est'd 1918 Call Collect RE 9-1130

## FOR SALE—MISC.—Cont.

FOR SALE—IMMEDIATE DELIVERY! Eureka Smokehouse Burner Assemblies! For meat smoke houses using bottled gas. Completely automatic. Clean filtered smoke. Distributes heat uniformly. Low gas consumption. Automatic temperature and pilot control. Less product shrinkage. Easily installed. Write for descriptive pamphlet. Eureka Equipment Company, P.O. Box 396, Beloit, Wisconsin.

## SERVEL GAS REFRIGERATORS

\$400A—4 cu. ft.

BN600A—6 cu. ft.

\$600A—with Cross-top Freezer

Used: Guaranteed in good operating order. Excellent condition. Low delivery cost anywhere. Send for illustrated folder NOW.

BEACH REFRIGERATOR CO.

196-11 Northern Blvd. Flushing 58, N. Y.  
Phone Flushing 7-4161

## PROFESSIONAL SERVICES

LET MY 32 YEARS OF PRACTICAL "LP" experience assure you maximum profits. Equipment revisions, property evaluations for sales or refinancing, and assistance on legal suits also supplied. Floyd F. Campbell, Management Counselor, 821 Crofton Ave., Webster Groves, Mo.

## PROPANE GAS PLANTS

ANHYDROUS AMMONIA PLANTS

Designed and Installed

PEACOCK CORPORATION

Box 288, Westfield, N. J.

## L. P. GAS INSURANCE

Have your agent write us about our Complete and Comprehensive Coverage for Adequate Limits of Liability at Reasonable and Normal Rates with Specialized Safety Engineering and Claim Service. Available only in Alabama, Arkansas, Arizona, Florida, Georgia, Kansas, Louisiana, Mississippi, New Mexico, Oklahoma and Texas.

PAN AMERICAN FIRE &  
CASUALTY COMPANY

Earl W. Gammage, President

P. O. Box 1662 Houston, Texas

## BUSINESS RECORDS

BUSINESS RECORD FORMS. ALL-WEATHER EZE-SNAP delivery invoices, for use when making LP gas metered truck deliveries. 1000 sets (3 part) imprinted with name, address and telephone. \$18.00 per 1000 sets. Advise make of meter. DEGREE DAY SYSTEMS, Dept. BP WOODSIDE 77, L. I., N. Y.

SERVING 20,000 PETROLEUM COMPANIES over 30 years with petroleum price cards, customer reminder Eze-Stik labels, telephone call—service order—LP metered delivery invoices, Eze-Snap Service Form, Duraluminum ticket holders, Sort-O-Matic Rack, etc. Write us for details, no obligation. DEGREE DAY SYSTEMS, Dept. BP, WOODSIDE 37, NEW YORK.

NOW! BE FIRST TO GUARANTEE "AUTOMATIC" LP-GAS DELIVERY! Gas delivery whenever customer's tank gets low. The HIDY Degree-Day Recorder keeps you accurately informed of customer's supply on hand. Lets you schedule deliveries more efficiently and save 30% of trucking and book-keeping costs. Write for free details in Booklet CBJ. And we'd like to know if you're now using a degree day system. HIDY-BROWN Recorder Co., 6988 Five Mile Road, Cincinnati 37, Ohio.

# Advertisers

\*These advertisers carry additional information on their products in the 1960 Butane-Propane Catalog.

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[illegible]

1. The first part of the document is a letter from the President of the United States to the Congress, dated January 1, 1861. It is a copy of the original letter, and is signed by the President.

Small Vaporizers are available in a variety of sizes and designs for use in the laboratory. They are designed to be used in a variety of ways, including the use of a gas cylinder, a gas flow meter, and a gas inlet valve. They are also designed to be used in a variety of ways, including the use of a gas cylinder, a gas flow meter, and a gas inlet valve.

[illegible]

Want all the details? Just drop us a line.

[illegible]

**JOHN E. MITCHELL COMPANY**

# *Do you want to make more money?*



If vapor metering was relatively new or untried, you with reason might doubt its advantages. But over the years more and more LP-gas dealers have built their business on a foundation of metered service.

With vapor meters, you can offer prospects all the sales advantages of "city type" gas. And with meters you can't help but improve your profit picture—by adding to your storage capacity—by cutting down on

gas losses—by streamlining your truck routing—by making it easy for your customers to pay, and pay promptly.

Thousands of vapor meters are already in service, making money, saving money for alert distributors. Isn't it time you got all the facts? Write for bulletin ADV-41. Rockwell Manufacturing Company, Pittsburgh 8, Pa. In Canada, Rockwell Manufacturing Co. of Canada, Ltd., Box 420, Guelph, Ont.

## **VAPOR METERING** *will improve your profit picture*

### **GO MODERN WITH THESE MODERN METERS**

This is the meter that will put more profits in your pocket. Its clean cut lines will tell your customers that the accuracy of your measurement matches the quality of your service. The sturdy aluminum outer case resists weathering and impact. The capacity rating of 240,000 Btu's per hour is ample for most any service.



**LP-GAS VAPOR METERS**

another fine product by

**ROCKWELL**



